

PERSONAL COMPUTER

Premier Issue

# Pc ACE

SIMULATIONS • GAMES • CD ROMS • SCIENCE FICTION

## **COMMAND & CONQUER!**

SO YOU WANT  
TO RULE  
THE WORLD?

## **FILLING YOUR FOOTLOCKER**

THE PC ACE  
CHRISTMAS  
BUYER'S GUIDE

**WING COMMANDER IV**  
EXCLUSIVE INTERVIEW WITH  
**MARK HAMILL**

**BATTLECRUISER: 3000 AD**  
A GLIMPSE OF FUTURE TECHNOLOGY



**January 1996**

U.S. \$4.95

Canada \$5.95

U.K. £2.95





**FIRE AT WILL!™**

## You've seen the movie... Now play it!

Immerse yourself in the electrifying force of the hit feature film "Top Gun"! In *Top Gun: Fire at Will*, YOU are Maverick.

The action explodes at the Top Gun School and sweeps you into the heat of global crisis. Live-action video creates the adventure of your life in this challenging, fast-moving flying game!

- Select Instant Action or lead over 40 missions
- Dogfight solo, modem or network
- Choose from multiple skill levels



**Spectrum  
HoloByte**



Available for  
PC CD-ROM

World Wide Web: <http://www.holobyte.com>

Visit your local retailer or call 24 hours 1-800-695-GAME (U.S. and Canada)

™, © 1995 Paramount Pictures. Top Gun is a trademark of Paramount Pictures.  
All rights reserved. Spectrum HoloByte is a registered trademark of Spectrum HoloByte, Inc.

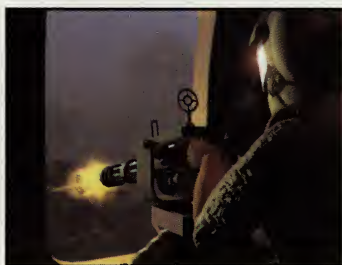


# PC ACE Magazine



**PREFIGHT:** *Meet The PC ACES* 4  
**FRONT LINES:** *News From The Cutting Edge Of Computer Game Technology* 8

## PC ACE FEATURE: 14 **Command And Conquer Brings Wargaming To The Masses**



**SKUNKWORKS:** *Behind The Scenes Look At The Latest In Sims And Games Development*

**Exclusive Interview With Mark Hamill** 28  
**The Making Of Wing Commander IV** 31  
**Age Of Rifles** 36  
**Ivan On Deck! Su-27 Climbs To Altitude** 38  
**The Dig** 42



**HOLIDAY BUYER'S GUIDE:**  
**The Essential Wargamer: Building Your Wargame Collection** 44  
**Quarks, Quasars & Question Marks: Sci-Fi** 52  
**The Toy Box: All The Accessories You Will Want For Christmas** 56  
**Hard Copy: New Strategy Guides & Reference Books** 60

## PC ACE FEATURE: 64 **Battlecruiser 3000 AD:** *A Glimpse Of Future Technology*



**REVIEWS:** *Apache* 72  
*Crusader: No Remorse* 76  
*Steel Panthers* 78

**THE ACE FILES:**  
**Flight Leader** 80  
**The Armory** 83  
**Debrief** 86  
**Supply Lines** 92  
**The Rookie** 96

Volume1 Number1  
 January 1996

### THE PC ACES

**Publisher**  
 Jim Bender  
**Associate Publisher**  
 Gregg Oehler  
**Co-Publisher**  
 Ed Dille

**Editor-in-Chief**  
 Bill Kunkel  
**Executive Editor**  
 Laurie Yates  
**Senior Editors**  
 Tom Basham  
 John Withers  
**Managing Editor**  
 Becky Freeman  
**Associate Editors**  
 Brian Workman / Tony Morman  
**Contributing Editors**  
 Jason Bender  
 Bernie Dy  
 James R. Jones III  
 Steve Kent

**Design & Production**  
 John Perry  
 Sherri Savard

**National Advertising Director**  
 Jim Bender  
 (805) 565-4782  
 (805) 565-5590 Fax

**Advertising Manager**  
 Ross Miller  
 (614) 886-5351  
 (614) 886-6835 Fax

**Advertising Offices**  
 PC ACE  
 P.O. Box 1320  
 2185 Lillie Avenue  
 Summerland, CA 93067

**Editorial Offices**  
 PC ACE  
 Rt. 1 Box 363 AA  
 Proctorville, OH 45669  
 (614) 886-6351  
 (614) 886-6835 Fax

**Newsstand Consultant**  
 Oehler Media  
 Gregg Oehler  
 660 Gateway Drive SE, #103  
 Leesburg, VA 22075  
 (703) 771-1243  
 (703) 771-9168 Fax

PC ACETM is published monthly by Vector Publishing Group, Inc., P.O. Box 1320, Summerland, CA 93067. Copyright 1995 by Vector Publishing Group, Inc., All rights reserved. The contents of this magazine may not be reproduced in whole or in part without the written permission of the Publisher. Vector Publishing Group, Inc., assumes no responsibility for unsolicited articles or visual media.

ISSN: 1084-8509  
 PRINTED IN USA



## Pre-Flight:

# Meet the ACES!

Welcome to Hanger 51, home of the PC ACES. Sure, I know you have heard all kinds of conflicting rumors about what goes on in this place but, don't worry, we are here to set the record straight, once and for all.

What's that, you know of Hanger 51 but not the PC ACES?

That's OK too, because that is the way we all wanted it to be—until now.

The Aces are a collection of former mercenaries whose records extend back to the very birth of electronic gaming. As mercenaries and independents, the ACES served with every major gaming magazine in the theater of operations. They collectively logged over 6000 missions, delivering their ordnance (i.e.: articles) on time and on target. Each survived countless coups and power plays, and continued to develop both

their skills and their reputation as expert professionals in their chosen field. They all stood alone, and had almost always done so. That was about to change, however. Here is how it went down.

On a fateful spring night deep in the desert, a meeting was called. Roll call was taken and some of the attendees stood pensively, sizing one another up. Several other members of the group were hunched over a card table, a set of papers spread in front of them, filled with symbology that would have little meaning to those outside their inner circle. Ken Vance (a.k.a. Viper) lead the discussion amongst the test pilots on game codes, cracking solutions and other black box operations. Things were proceeding nicely until Eric "Tony" Morman started to doze off and Andy Swann (a.k.a. Max) had to slap him

up side of the head. Pandemonium broke out and weapons were drawn. It seemed as if bloodshed was inevitable until Laurie "Yahoo" Yates stood on a table and fired two rounds of .45 cal into the ceiling.

This had a calming effect and the meeting continued apace.

Colonel Bender (formerly of *PC Combat Simulations*) stood on a raised stage, his hands flat on the briefing table in front of him, his eyes surveying the room, looking every inch the retired RAF officer. He explained that this elite group had been assembled to form a new organization, the *PC ACES*. Further, that the *PC ACE* mission is to provide top flight coverage of simulations, wargames and science fiction gaming, using recognized opinion leaders from each field of expertise.

Tom "KC" Basham, a former defense contractor for the U.S. Army, Electronics Engineer and, more recently, highly acclaimed journalist specializing in the coverage of simulations, will fill the position of Senior Editor for *PC ACE*. Tom will be instantly recognized by simulations fans as the originator of "Guns, Guns, Guns," a monthly column that appeared in *Strategy Plus*. KC is also a frequent contributor to "Bogey's Bar and Grill" in *Computer Gaming World*, and the creator of the column "Flight Leader." Basham is also a highly visible member



Join the **PC ACES**  
and you too "Can  
Rule The World!"

See our **Command  
And Conquer** feature  
for further details!



# CUTTING EDGE



F-16 FLCS™



"I can't shake him!" Cries your wing man as the MiG matches his every move.

Fearlessly, you push the **ThrustMaster F-16 TQS™ throttle** forward and your Falcon roars to the rescue.

The force of acceleration slams you into the ejection seat as you tear through the sky. Your skilled fingers dance over the **fully programmable switches** as your thumb works the **TQS™ trackball**.

Your other hand tightens around the **ThrustMaster F-16 FLCS™ stick** as you maneuver behind your enemy.

Suddenly, the MiG falls into the funnel of your HUD. Squeezing the trigger, a lethal hail of cannon fire rips through his ship - sending him down in flames.

Unlimited Programmability  
Unparalleled Performance  
Uncompromising Reality



F-16 TQS™

## THRUSTMASTER®

### THE REALITY SPECIALISTS

10150 SW NIMBUS AVENUE PORTLAND, OR. 97223-4337 PHONE (503)639-3200 FAX (503)620-8094  
<http://www.thrustmaster.com>





of the online flight simulator community, both as a member expert on the Compuserve Flight Simulations Forum and also as the Group Commander of the FSAF on Kesma's Air Warrior forum. Tom is the author or co-author of several strategy guides including: *Falcon 3.0: The Complete Handbook*, *Renegade: Battle for Jacob's Star: The Official Strategy Guide* and *Werewolf vs. Comanche: The Official Strategy Guide*.

Wargame coverage will be spearheaded by Big Ed "Mustafa" Dille, an Annapolis graduate with a degree in Military History, who brings real world experience and strategic analysis to the pages of *PC ACE*. In addition to his accomplishments as a fifteen year Naval Officer, Dille is also a veteran writer and editor, having worked at one point or another with virtually every major magazine in the field of Interactive Electronic Entertainment. Dille fulfills the Associate Publisher role for *PC ACE*. Additionally, he is the author or co-author of a dozen strategy guides for Prima Publishing including: *Harpoon*

*II: The Official Strategy Guide*, *Armored Fist: The Official Strategy Guide*, *Panzer General: The Official Strategy Guide*, *Warcraft: Orcs & Humans: Official Secrets and Solutions*, *Warlords II Deluxe: The Official Strategy Guide* and *Across the Rhine: The Official Strategy Guide*.

Bill Kunkel, the Editor in Chief, is literally the co-creator of electronic journalism. With co-author Arnie Katz, he produced the long running "Arcade Alley" for Video magazine in 1978, the first column devoted exclusively to the then nascent video and computer game media. The success of the column helped Kunkel, Katz and Joyce Worley launch the original *Electronic Games* for Reese Communications, the first publication of its type, in 1981. Kunkel is among the leading writers and analysts in the field, having amassed thousands of publishing credits, served in numerous editorial positions, and consulted at some point with virtually every major company in the business. He is the designer of nearly two dozen games and has consulted on count-

Odd, we **NEVER**  
have trouble with  
On-line help!

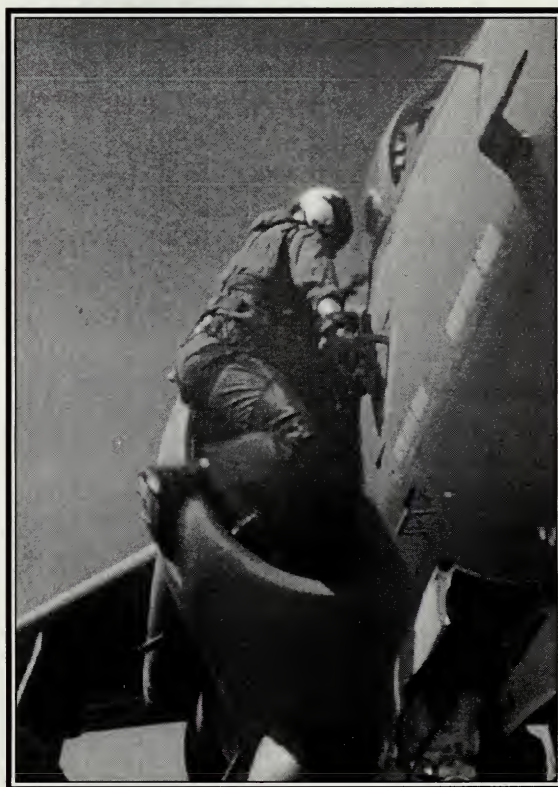
No one told the  
**Rookie** he would  
need a ladder!

less more. He also authored the "Kunkel Report" and "Game Doctor" columns for *Electronic Games* magazine, and his books include the strategy guides for *Maximum Carnage*, *FPS Baseball* and *Descent*. Finally, Kunkel is active and a noted personality within the worldwide community of science fiction fandom.

Why do you need to know these people in such intimate detail? Because all of them work for you. They have pledged their considerable skills and talent to bring you the vision that is *PC ACE*, a publication designed to guide you through the silicon valley of death and back again, with experts flying on your wing all the way.

**Enjoy!**

**From the Bunker  
Wolf Creek Compound**





# FRIENDS DON'T LET FRIENDS FLY SOLO

And with Werewolf® vs. Comanche 2.0™ you don't have to. That's because with two killer CD games in one box and advanced multiplayer capabilities (via modem, network or direct connect), you can go head-to-head, team up for cooperative play or fly solo.



And whether you're at the controls of Russia's premier attack helicopter or its fearless American counterpart, the RAH-66 Comanche, you'll be flying over the crystal clear reality of Voxel Space™ terrains and experiencing over 100 hair-raising missions. Missions you have never seen before, even if you're a Comanche vet.

NOVA



LOGIC

**Werewolf® vs. Comanche 2.0™**  
*Sometimes your best friends  
can be your worst enemies.*

Available on PC-CD-ROM

Werewolf vs. Comanche, Comanche, Comanche 2.0, Voxel Space, NovaLogic and the NovaLogic logo are trademarks of NovaLogic, Inc. Werewolf is a registered trademark of Data East USA, Inc. for video games. ©1995 by NovaLogic, Inc. All rights reserved.



# Front Lines

## News From The Cutting Edge Of Computer Game Technology

### Almost Back to Baghdad

Military Simulations, Inc (MSI) have had a few stumbling blocks getting their ultra-hard core flight simulation, *Back to Baghdad* out the door. MSI's Chairman, Bob Carter said laughingly, "We're still shooting for this year, but it may be December 31st." Carter added, though, that the delay is partially due to last minute additions to the product. After receiving a copy of the unclassified F-16C/D Block 50 manual, MSI decided to add many additional features found in the real F-16.

The first version will ship with approximately 60 to 70 fixed missions, including day, night, and bad weather sorties. Version 2, due sometime later, is expected to include a full-fledged campaign generator. Terrain is rendered from 10-meter-resolution satellite photos, providing high-detail texture maps. The city of Baghdad alone contains approximately 120 different texture maps. The Pentagon provided recon photos of Saddam Hussein's personal hide-away bunkers, some of which will be included in *BTB*. Cockpit graphics have undergone significant changes since the first screenshots appeared on MSI's web page, using 640x480 resolution for both cockpit art and out-the-window views.

Cockpit avionics are the hard-core player's dream and the casual player's nightmare. The radar warning receiver, for example, uses 10 to 15 dif-



ferent sounds consisting of tones and beeps to provide realistic, threat-specific warnings. For example, a SAM launch generates a different set of warning tones and beeps than being painted by a MiG-29's radar. The HUD has approximately 50 different modes, however LANTIRN pods will not be supported in release 1. The additional effort to add the appropriate 5 or 6 infra red HUD modes will take significant time and will not be available until version 2. The APG-68 will be fully modeled, giving users full control over azimuth and elevation controls as well as using a mouse or trackball for target designation. As previously announced, *BTB* will support a second, monochrome monitor as a dedicated APG-68 display, although the addition of a second monitor does reduce frame rate slightly.

## FRONT LINES

George Keverian, MSI's Vice President, indicated that a fast vide card and PCI bus makes more difference in *BTB*'s frame rate than CPU horsepower. While listing a Pentium 60 as the minimum requirement, options will be available to 486 users to decrease graphics intensity and salvage frame rate. One particular effect, transparent clouds including holes, really reduces frame rate, but can be disabled. Users will also be able to improve frame rate by disabling texture maps on individual objects. *BTB* includes a padlock view system very similar to USAF simulator systems where a small target window appears along the edge of the screen showing what the bandit is doing and where he is relative to the player. The system has been quite successful in USAF simulators. Additionally, *BTB* supports a full range of external




views.

BTB includes many other details, such as realistic weapons' procedures, ability to jettison fuel and stores, and a complex damage model with numerous damagable subsystems that monitors where the F-16 is hit. One particular mission takes place across the Iranian border and features significantly rougher terrain than found in Iraq. Version 2 will include network play, probably "online" network play where players from around the world connect via the Internet and fly together. As of this writing, MSI has made no decision on including air-to-air refueling. The illuminated director system which guides pilots to the tanker is extremely complex in the real aircraft, and MSI has not decided whether it's worth the development time required to implement the feature. Lastly, players will be able to fly as either the flight leader or the wingman, but they will not be able to alter missions until version 2 ships with the mission editor.

### **I-Magic And DI Prepare F-16 Simulation**

Digital Integration, designers of Tornado and Apache, are building a new F-16 simulation. Published by I-Magic and expected to ship in March 1996, the simulation will feature several regional conflicts. The F-16 simulation is expected to more closely resemble Tornado than Apache including a greater emphasis on mission planning (one of Tornado's strongest points). Incorporating lessons learned from Apache, the F-16 simulation is expected to have improved multi-player modes, including LAN and modem-to-modem support.



### **EF2000 Taxiis Into Position**

Digital Image Design (DID) should be shipping EF2000, the sequel to TFX, by the time this sees print. Late betas of the product indicate a heavy emphasis on texture-mapped ground terrain, including cities, snow-capped mountains, and other rugged terrain. Initial flight model tests have produced encouraging results for simulation fans while the simulated avionics suite seems directed at the hard-core crowd. One word of caution: 486 users need not apply. Even at minimum detail settings, EF2000 is little more than a slide show 486-66 class machines. Watch for a full review of the finished EF2000 in the next issue of **PC ACE**.

### **I-Magic and Kesmai prepare Air Warrior II**

The long-awaited successor to Air Warrior finally approaches. Expected to ship in the second quarter of 1996, Air Warrior II offers a host of new features. First, AWII is a Windows application. The initial release is expected to be a Windows 3.1 application with a Windows 95 version following thereafter. Besides supporting the online network play made popular by the original AW, AWII will feature significantly more "offline" play. The original AW offered little functionality for players unless connected to the online network. Users who are not interested in braving the online arena can still enjoy a challenging WWII combat simulation in "stand alone" mode.

Supporting TCP/IP, AWII will connect directly to Kesmai's host machine via the Internet. AWII also replaces the original, somewhat unwieldy interface with

an entirely new, more intuitive system. Offline play supports an improved, extremely challenging artificial intelligence during dogfights. Although offline "drones" in the original AW were rather easy to shoot down, computer-controlled aircraft in AWII are extremely challenging opponents.

### **Jane's All The World's Simulators?**

Much hype has surrounded the deal between Jane's Information Group (known worldwide for their annual military encyclopedias) and Electronics Arts/Origin. Although the deal should give both EA's Paul Grace and Origin's Andy Hollis access to vast amounts of technical information, these companies have not historically produced the ultra-hard core realism simulations which would benefit the most from such technical details. Adding the word "Jane's" to the title will not automatically produce a bet-

**FRONT LINES**



ter flight simulator. The proof, as they say, will be in the pudding and the pudding in this case will be the products Hollis and Grace produce under the agreement.

### **empire Interactive Opens New Hangar**

Rowan Software, developers of Flight of the Intruder, Dawn Patrol, and Operation Overlord, has had a few problems finding a publisher for their current project, Navy Strike. The publisher search has been an uphill battle, including Microprose dropping the project and a subsequent rejection from Domark. Scheduled at press time for release in October, 1995 on CD-ROM, Navy Strike is a real-time military flight simulation supporting Windows 95. In command of a United Nations' task force, the player controls an entire carrier air wing while flying an F/A-18E, and F-22N, or an AX bomber aircraft in several regional conflicts. Additionally, empire Interactive will publish Rowan's Dawn Patrol Deluxe, a CD-ROM based follow-up to their original Dawn Patrol. Dawn Patrol Deluxe will include head-to-head modem play. Rowan and empire Interactive anticipate shipping two additional titles in 1996.

empire Interactive has also signed an exclusive agreement with TalonSoft to publish their upcoming titles including Battleground: Ardennes and Battleground: Gettysburg. Ardennes recreates the Battle of the Bulge in late 1944 and early 1945 when US forces were cut off by the last major German offensive of WWII. Scheduled for release in October, 1995 on CD-ROM, Ardennes will support both Windows 3.1 and Windows 95.

### **Microprose Continues F-15 Strike Eagle and 1942: Pacific Air War Series**

Microprose has started work on F-15 Strike Eagle IV, the next installment in the long-running Strike Eagle series. The design team includes executive producer Scott Spanberg, producer Greg Kreefle, and A/I designer Scott Elson (who also designed the excellent A/I found in Microprose's earlier product, F-14 Fleet Defender). F-15SE4 is still in the the early planning and design stages with no release date announced. Meanwhile, another design team has begun work on a follow-up to 1942:PAW tentatively entitled 1943 and recreates the air war over Europe.

### **New Suncom Joysticks Storm Market**

Suncom has recently entered the high-end flight stick market with their "Strike Fighter" series of joysticks based on the control stick found in the F-15E. "Reports from retail," said Dan Zemaitis, Suncom's Marketing Manager, "indicate the Strike Fighter series has been greatly received by consumers." Zemaitis added that demand for the sticks have been high and a compatible throttle controller is in the works. After beating CH Products' new programmable controllers to market Suncom appears to be the Thrustmaster's first serious competitor. Look for a review of Suncom's high-end product, the F-15E Eagle joystick, soon in **PC ACE**.

### **Race Finishes with Sony, Jumps to Spectrum HoloByte**

Just weeks before the much-ballyhooed American launch of the Sony Playstation, Steve Race, president of Sony Computer



**FRONT LINES**

Entertainment of America (SCEA), surprised many observers by suddenly moving on to flight sim giant, Spectrum HoloByte, Inc. Whether he jumped or was pushed remains unanswered at press time, but what is known is that Race is now CEO of Spectrum HoloByte (replacing Gilman Louie, who retains his position as Chairman of the Board), a company which has long published in both the computer and console formats.

Why would Race depart the top spot at Sony, helming the launch of the heavily hyped Playstation (PSX)? There seem to be two major schools of thought on this subject. "I think that he was looking to get out before the shrapnel started flying," opined one veteran video game magazine editor who believes the Sony launch will be a high profile flop.

Other insiders have a different take. "I think it was a



clash of styles," explained the president of a multi-platform video game publishing house. "I am very fond of Steve, but can you imagine him working alongside those high-level Japanese executives? It's a joke."

Spectrum-HoloByte, meanwhile, has undergone several key employee turnovers in recent months, including company fixture Tom Byron's departure to LucasArts. Furthermore, when SH revealed its financial picture for the first quarter of '95, the bottom line showed a net loss of \$9.4 million as the publisher continues to reorganize and reduce its workforce.

Whatever the case, the console industry's loss is Spectrum HoloByte's gain, as former Sega consultant Steve Race is generally regarded as a top gun by the vast majority of the gaming community. Also, Spectrum HoloByte is a third-party publisher for computers, Nintendo, Sega, 3DO and, of course, Sony.

### Viacom Joins Looking Glass War

Viacom New Media, the electronic gaming arm of Viacom, Inc. (owners of MTV, Nickelodeon, Paramount Studios, etc.) has established what they call a "strategic alliance" with Looking Glass Technologies. Viacom emerged from the deal with a minority equity position in LGT, which will develop, among other projects, a series of multi-platform games based on the Star Trek: Voyager TV series.

Looking Glass, with HQ in Cambridge, MA, is best known to flight sim fans for such titles as Flight Unlimited (Virgin) and Chuck Yeager's Advanced Flight Trainer (Electronic Arts).



### CH Answers Your Windows '95 Questions

The news that Microsoft's ubiquitous Windows '95 has built-in joystick drivers has generated some anxiety in Controllerville. Fortunately, CH Products managed to foresee the difficulty and has released to PC ACE the information its many customers are eagerly seeking.

Three CH controllers already appear among the built-in joystick drivers: the CH

Flightstick, Flightstick Pro, and Virtual Pilot controllers can therefore be installed by name. Fortunately, however, other CH controllers near and dear to the hearts of sim gamers can also be installed using the following analog settings:

Virtual Pilot Pro = CH Flightstick Pro setting

F-16 Combatstick = CH Flightstick Pro setting

F-16 Flightstick = 3-axis, 4-button joystick setting

Jetstick = 2 axis, 2 button joystick setting

MACH Series sticks = 2 axis, 2 button joystick setting

CH Pedals and Pro Pedals (plane mode) = check mark "rudder"

CH Pedals and Pro Pedals (car mode) = check mark "rudder" then select a 3 axis setting, such as the CH Flightstick setting

With these guidelines, CH controller fans can safely use their favorite joystick(s) on that modern marvel, Windows '95.

### Company Debriefings

Going over budget is not the exclusive domain of expensive movies such as Waterworld; industry gossips are claiming that MicroProse may have gone as much as 300% over budget on the development of Across the Rhine....When wargamers get a look at Gary Grigsby's latest offering from SSI, Steel Panthers they may begin to experience heart palpitations—the game is actually playable without a hex grid! After reeling back from the monitor, our trembling wargame mavens had to admit the game looked fantastic, with a level of visual production values never before imagined in a Gary Grigsby product. "But...no hex grid?" one wargame junkie finally stammered.



"Don't worry," the demonstrator assured him. He then tapped a command key and, viola!, that familiar hex grid matrix was overlaid onto the scenario. "It's kind of like training wheels," one industry observer pointed out. "Even when you don't need them anymore, there's a certain level of insecurity involved in actually taking them off altogether."

Some bad news for Spectrum HoloByte: reports from retailers indicate the long-delayed PC version of *Star Trek: The Next Generation* seems to have prematurely run out of legs, with rumors of price cutting that should come to pass by the time you read this....Virgin has acquired the rights to *Blade Runner*. Westwood Studios, the hot Las Vegas-based development and publishing house (*Dune II*, the *Kyrandia* series, *The Lion King*, etc.), will develop the property for a '96 release.

#### QQP: Back in the Trenches

QQP, flush with its new American Laser Games' subsidiary status, is both collecting its older, disk-base games into a CD-ROM format, and releasing four new titles before Christmas: QQP's *War At Sea* unites *The Grandest Fleet*, *The Lost Admiral*, and *WWII Battles of the South Pacific* at a suggested retail price of \$34.95.

QQP's soon-to-be-rolled-out list also includes the following titles.

*The Lost Admiral II* takes the original concept and adds natural disasters; tides; and a computer-controlled, randomly appearing, intruder force. Armor, infantry and bomber units have been added to support ground and city invasions.



*The Perfect General II Scenario and Campaign Editor* is an add-on that permits gamers to forge both full campaigns and individual scenarios. Players exercise complete control over their creations ranging from weather conditions and topography, to map resizing and game duration.

*Battles In Time* puts gamers in command warfare, with authentic weaponry, while moving through time. Players may find themselves in a variety of time periods, ranging from the paleozoic era to science fiction landscapes. Utilizing a series of "What if..." scenarios, *Battles* allows anachronistic experimentation and provides a possible answer to the oft-pondered query: "What would happen if a Tyrannosaurus Rex had to fight aliens?"

*Visions of Glory* will be a 40-player network game which enables players to create a group of mercenaries which travel from planet to planet on missions. The silicon soldiers, like their paper counterparts, retain their skill levels so the experienced gamer can tackle progressively harder missions.

#### Fantasy General Looks to be SSI's Latest Hit

Strategic Simulations, Inc has been making wargames

since 1979. Their first game was *Computer Bismarck* for the Apple II. Sixteen years later, they continued their devotion to the craft with such releases as *Wargame Construction Set II: TANKS!* and *Panzer General*. SSI is also known for their fantasy role playing titles including *Pool of Radiance* and the *Eye of the Beholder* series. Combining their experience in these two genres, they plan to release *Fantasy General* during the first quarter of '96.

*Fantasy General*, as the title suggests, is a wargame placed in a fantasy setting. It uses the same game engine that drove *Panzer General* and army sets that include the usual pantheon of D&D type races and beasts. The game, still in early development, seems to offer the player many options and settings. When a player begins a game he chooses the type of character to play from a preset list and assigns particular skills to that character. The same settings can also be configured for the opposition. For instance, a player can decide to set up a game where he is a good warrior with fame and charisma bonuses and the enemy is an evil wizard with bonuses as a beast master and a healer. It appears that the type of units available to a leader depend upon the character class chosen. Each class has both strong and weak points which vary depending upon the opposition.

The interface is easy to learn and use, especially for players familiar with *Panzer General*. Knowing the emphasis SSI places on quality, *Fantasy General* will surely be a captivating and engrossing game.

FRONT LINES



# Deploy. Destroy. Enjoy!

**C**ommand a single squad or an entire battalion as any Allied or Axis nation – *and get ready to rumble!* Game play is fun, easy and gorgeous! Explosive SVGA graphics and intense animation help you feel the destruction as buildings burn and tanks explode! All this plus digitized photos of over 200 tanks make STEEL PANTHERS as exciting to watch as it is to play. Add digitized sound effects and this WW II blockbuster will have you running for cover!

To Order: Visit your retailer  
or call 1-800-601-PLAY  
with Visa/MasterCard  
(North America  
only, please).

# STEEL PANTHERS



On PC DOS  
CD-ROM for IBM  
and Compatibles

Screens shown: 256-color SVGA.



A MINDSCAPE® COMPANY

STEEL PANTHERS is a trademark of Strategic Simulations, Inc.  
©1995 Strategic Simulations, Inc. All rights reserved.



# ***I Came, I Commanded, I Conquered***



**So You Want to Rule  
the World?**

**by Eric Morman**



*"War can only be abolished through war, and in order to get rid of the gun it is necessary to take up the gun."*

**-Mao Tse Tung**

Sometime in the near future, two world powers are engaged in a deadly struggle for control of the planet. In one corner, we have the Global Defense Initiative, a

relatively benign group which follows the humanitarian belief that the ultimate goal of war is peace. The Brotherhood of Nod, meanwhile, is a nihilistic terrorist regime that seeks for power for its own sake, using any means necessary, preferably involving high explosives.

Both these antagonistic armies seek the collection of





Tiberium, a mysterious and valuable mineral which grows slowly in small patches around the world. Once harvested and refined, Tiberium is sold to fund the ongoing war.

The price of victory, however, will require more than a rare mineral – a steady flow of blood from both sides has already begun to soak the landscape in grue. Westwood Studios' *Command and Conquer* (Virgin) places arm-chair generals in direct tactical control of the two forces, complete with a wide range of conventional, amphibious, airborne, and reconnaissance units to batter foes. With a few minutes of experimenting, players can jump right into combat without ever reading the manual.

After charting the political and military progress of both sides on a world map and choosing a country to invade, the missions begin with a debriefing and simple objectives. The map is a low aerial view of varied terrain, governed by an invisible grid, where the smallest infantry unit occupies a single space and travels smoothly from one to the next.

Each scenario plays out in pseudo-real time and commanders must constantly monitor and direct the available forces to their goals, while at the same time building military structures and collecting Tiberium, if those resources are available. The map begins uncharted, forcing commanders to explore and to deal with surprise attacks, for the enemy will not wait politely for their adversaries to make decisions. The result is a fast-paced simulation that requires constant attention to details, with each battle lasting from thirty to ninety minutes, depending on game speed and player skill.



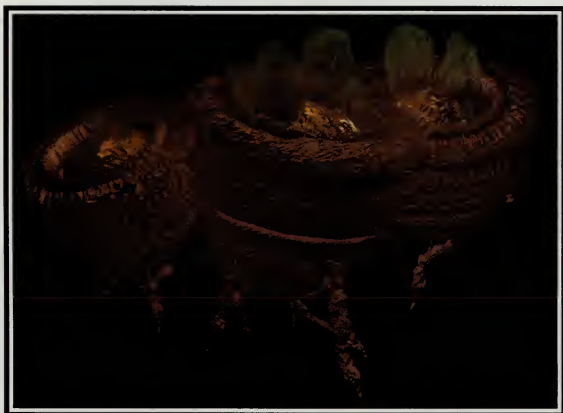
Attack cycle.

(Right) Hitting the beach combat sequence.

The game engine of C&C is unmistakably similar to Virgin's *Dune II* (which was developed by Westwood) and Blizzard's *Warcraft*, and veterans of these contests will immediately notice several improvements over the older designs. The most significant change concerns the command interface, which is now more intuitive and streamlined. When issuing commands to multiple units, commanders click and drag open a white box to include any number of units on the screen, and all of those units follow the same orders. After selecting one or more units, the cursor automatically changes to suit the destination. If it points at any open or unexplored terrain, the troops will proceed to that point with a mouse click and form a defensive group upon arrival, firing on any enemies which come into their range. If the pointer designates an enemy target, the cursor changes and all selected units will attack it relentlessly. This eliminates the previous need to go to a sidebar and select orders before choosing a destination, making frequent commands much faster and







easier to issue.

In terms of strategy, the command efficiency opens opportunities for diverse operations without slowing the simulation down to a crawl. It also reduces the opportunity for error while fumbling with icons during critical encounters. Unfortunately, when controlling multiple groups, one group must be deselected and the other boxed in again to change its orders. This results in units getting left out if all of them are not in the box at the moment of selection, all of which is especially tricky if they are mobile and traveling at different speeds.

When building structures, extra space for troop movement is included on the south side, which eliminates most of the previous trouble of trapping or seriously impeding friendly units. However, some planning is still required for placement, since units of either side still cannot pass north to south between adjacent structures. Fortunately, the missions which allow building begin with a Mobile Construction Vehicle, affording commanders the luxury of starting their base in a strategic location (or closer to a supply of Tiberium). Issuing construction orders still requires a sidebar, but this permits constant monitoring of progress to completion without having to switch back and forth between construc-

(Above) Tiberium crystals.

(Right) "So you want to rule the world!"



tion and command icons.

Some aspects of the combat AI routines have also been improved to provide more interesting encounters. Infantry units, which now include grenadier, rocket, and flamethrower specialists, are no longer just cannon fodder. When threatened with heavy ordinance, many of them hit the dirt and crawl toward their targets, making them much harder to hit while they continue to attack. This does not make them invulnerable, but it does give them a much better chance to take out more pow-

erful units when deployed in groups.

Enemy units retreat to their maximum weapon range if possible, and some will turn tail and run if faced with overwhelming odds. Heavy vehicles can still crush infantry beneath their treads, but this form of attack is not built into the AI, which is both good and bad; if a tank happens to run over enemy infantry en route to a destination it eliminates them, but an immobile tank will simply fire. Even a Tiberium harvester with no weapons can effectively

(Below) Tiberium Harvester.







remove attacking infantry, but to do so requires constant orders to move in various directions. Obviously, this bodes well for your own troops, since an enemy tank could make quick work of crawling grunts if it had the option to do so.

Beyond that, stationary units often remain stubbornly inactive until an enemy unit comes within range. This can lead to a Patton-like urge to slap offending goldbricks who stand around chatting idly while commando squads are slithering through the front door.

In terms of realism, C&C is much more of a game than an accurate model of real world conflict. Had Westwood adhered to technical accuracy, battles would be quite brief, given the high level of firepower and close range of the combat. This is hardly uncommon in military sims, and the tradeoff for greater entertainment looks like a good bargain.

Each adversary has a set of units and structures unique to that side, such as the Nod Buggy and GDI Grenadiers, while both sides share the basic Minigun Infantry unit and many others. Each unit has its own set of strengths and weaknesses versus enemy units, in terms of speed, armor, and weapons range. Nod prefers strength in numbers with more basic equipment, but in later missions earns the use of structures which house devastating weapons such as nuclear missiles. The GDI relies on



advanced mobile units and aircraft strikes for most of its offensive power, and this technology becomes available to them faster than Nod develops theirs. In addition, if one side takes over a production structure of the other with an Engineer, the capturing side acquires the ability to produce enemy units for the rest of the scenario, assuming they can maintain control of it.

### Scenarios To Go Strategy for *Command & Conquer*

Each mission begins with a certain number of starting units, and many include a Mobile Construction Vehicle. In scenarios without an MCV, commanders must use only the starting forces to complete the mission. However, construction and Tiberium harvesting are essential to the overall campaign for world power, and will be the focus of most missions, since the



(Above) C-5 Galaxy blows a landing!

(Below) Mammoth Tank.

enemy is doing the same.

The first task is to find a suitable site for the MCV to open up. By moving the all the starting units around in a group to map the surrounding area, any immediate enemy threats can be dealt with while quickly scoping out a good site behind a ridge line







for defense, near an outcrop of Tiberium for quick conversion into credits, or right where it sits from the start if necessary. Make sure to leave enough extra land for more structures without seriously impeding friendly forces.

Once the MCV deploys into a Construction Yard, immediately start construction of a Power Plant by clicking on its icon in the sidebar. As new structures and units become available, they appear in two columns on the sidebar beneath the symbol of the side being played. This symbol, after a few missions, becomes a long-range map when a Communications

Center is built. On the left side of the menu, a vertical bar shows the amount of available power and a line at the current usage. Since all structures except barriers and guard towers require various amounts of electricity, Power Plants are needed for them to operate, especially the Communications Center. Too many structures and not enough power causes the radar display to wink out, which is unpleasant when trying to track friendly and enemy units spread over a wide area. Low power also reduces the efficiency of other structures, so watch it carefully and anticipate power requirements.

Next comes a Barracks for the GDI, or a Hand of Nod, to start training new infantry units. These are the backbone of most forces in the earlier missions, since they emerge quickly and cheaply. After placement, unit training and structure development can take place simultaneously, an important advantage in the race to establish a solid foothold. Build a Refinery next; once placed and operational, a Harvester rolls out to begin collecting Tiberium at the nearest site. If the extra credits are available for a second refinery, build it also to double the rate of income, but do not sink money into structures if the need to produce military units is greater at the moment. The Refinery only stores one thousand credits of harvested Tiberium, so expect to build Silos once the credits start piling up. Do not squander resources or enemy forces will soon march in and destroy the base. Keeping structures intact often makes the difference between victory and miserable defeat.

Once these basic structures are placed, completion of the mission begins.

Assemble a large group of mixed units, preferably mechanized, to defend the base and attack nearby threats. Choose a single, fast unit to go exploring, and don't expect it to come back. Enemy units will station themselves in various places and numbers far outside their base, and will attack if not already moving to wreak havoc elsewhere. Mapping as much territory as possible gives the best chance of spotting incoming units, and some will consider a trespasser as a cue to advance rather than attack for defense. The base has to survive an initial wave of enemies with this strategy. However, once dealt with, most of the explored territory remains free of stationary foes, while mobile targets get spotted much sooner, allowing some preparations for their arrival.

Afterwards, continue building up forces for a large scale assault. A constant stream of sparse enemies invade from this point on, making an adequate defensive force necessary. Keep sending single units out to find the enemy base or whatever the mission requires, and set up a few stationary defenses to deal with incoming aircraft. With stalwart offensive and defensive forces assembled, begin a mass movement of units toward their destination. If enemy aircraft or other large scale attacks are a problem, split the force into several groups and have them all converge just short of their goal to prevent losing most of them in a single attack.

When seeking to destroy the enemy base, the first target should be their Construction Yard, if possible. Destruction of this structure prevents them from rebuilding demolished ones later,



though they can still attempt to repair damaged ones. Since their base is usually defended heavily, the first wave of attackers may or may not survive long enough to finish off the base. However, enemy defenses take quite a beating with a careful advance, and in the meantime a second or third force can be assembled to finish the job. Other prime targets are barracks and unit production plants, which prevent them from recovering their losses if their Construction Yard falls first. Once most of the enemy units are eliminated, completion of the mission is only a matter of time. Engineer units come in very handy at this point; they have insignificant combat skills, but easily saunter in to claim enemy structures rather than destroying them.

The key to any successful attack lies in knowing the strengths and weaknesses of every unit, friend and foe alike, especially in missions with no construction. Often, the number of units required to perform any given task depends on what type of firepower they carry. Those with long weapons ranges take out stationary targets with ease. Flamethrower troops incinerate enemies quite nicely at short range, but tend to explode when killed, often taking nearby friendlies out with them. Trial and error usually reveals a unit's effectiveness, especially when they get decimated or neatly remove a threat. Each successive mission introduces new units and structures on both sides, which raises the stakes and forces commanders to reevaluate their tactics.

The real chaos takes place in modem/serial and network battles. Against the computer, patterns and meth-

Air superiority makes the difference!



ods of attack become obvious after just a few missions, and most enemy structures and units are already in place without a build-up period. Against a human opponent, the goal becomes to quickly find and crush them at all costs before they have a chance to set up. In network games, six players can face off in the same battle, with the computer controlling up to four of them. These battles include Crates scattered around the battlefield, containing various weapon pickups and bonuses to encour-

age conflict. Network play is perhaps the best improvement of all in the game, because the computer AI routines are still limited and predictable, making a free-for-all scenario entertaining indeed.

These strategies are by no means a guaranteed method of winning every scenario. Herein lies the lure and appeal of the simulation: each scenario plays out uniquely, even when replaying the same one several times. When used as a guideline, following this advice eliminates many of the common





mistakes which lead to defeat, even against human opponents in serial or network play. Finding the most likely solution requires fast reactions and constant changes in tactics to suit the situation at hand. *Command and Conquer* is an engrossing and demanding game, as players will discover when they find themselves repeating, "Just one more mission!" while the little hand on the clock seems to spin as fast as the big one.



## **"SEND MORE DEVIL'S TONGUE INCINERATOR TANKS"**

**COMMAND AND CONQUER  
BRINGS WARGAMING TO  
THE MASSES**

**LAURIE YATES**

The main reason wargamers are forced to survive on such a slim diet of releases is the brute fact that the mass market is intimidated by the genre. All those hex-grids and sophisticated troop placements are challenging to newcomers. All the icons and ordinance types serve as a fibre glass barrier that allows the typical game player to look but not participate. In point of fact, most fans of the genre, as with many role-playing fans, arrived on the PC scene only after years of non-electronic wargaming. Surely, anyone who has worked his or her way through a board game such as *Stalingrad* will find the typical computer *wargame* a snap. After all, the boring stuff is handled by the computer, and the rest of the genre's conventions are right off the folded boards of the

games they have been playing all along.

Until now, however, only sporadic attempts were made to turn the broad base of computer users on to wargames. In the early '80s, Broderbund had a hit with the Murry Brothers' innovative program, *The Ancient Art of War*. The game featured no hex-grids, boasted a player-friendly interface, and was successful enough to inspire a pair of sequels: *The Ancient Art of War at Sea* and the ironic *Ancient Art of War in the Skies* (since when does eight decades constitute antiquity, anyway?), but neither found the universal acceptance of the original.

Years later, around the dawn of this decade, Virgin released a game entitled *Dune II: The Battle for Arrakis*, a mainstream-oriented wargame. And, while the title

didn't attract the audience it deserved (not surprisingly; the original *Dune* wasn't a wargame; it was a French-design that Virgin picked up on a shopping spree), it served to show what could be done with the genre in a more broadband format.

Now, several years later, the small American development house that created *Dune II* has evolved into one of the premiere development house/publishers in the software world. Westwood Studios, housed in exotic city of Las Vegas, Nevada, has a distribution and affiliate label deal with Virgin, and such hits as *Fables & Fiends: The Legend of Kyrandia*, *Lands of Lore: The Throne of Chaos*, and the video game version of *The Lion King* on its resume. It also holds the rights to *Blade Runner* and is about to release a breakthrough net-



work version of Monopoly.

The company's founders, Brett Sperry and Louis Castle, decided to take another crack at producing a mainstream wargame. *C&C* is Westwood's ambitious attempt to max out the *Dune II* engine in order to reach across the gulf that has kept wargamers locked in a silicon ghetto since the earliest days of computer entertainment software.

The deceptively simple game is much more than a simple good vs. evil contest. Louis Castle, Westwood veep and a primary *Command & Conquer* cheerleader, explains that "in addition to the surface thread involving a conflict resolution between the forces of the GDI and the Brotherhood of Nod, toward the end of the game a subplot is revealed. We don't want to spoil any major surprises, so suffice to say that there are weird things occurring in the third world nations on which the outer space Tiberium crystals landed; and these things must be dealt with. It's a great tease, and a counterpoint to the story."

**PC ACE** was able to spend time with the Westwood Studios crew and got a detailed tour of *Command & Conquer*, just after its E3 premiere. Mike Legg, a Westwood programmer and one of the primary cheerleaders for *Command & Conquer*, excitedly summed the game up with "You have tons and tons of things exploding and blowing up all over the place. Tons of screaming, tons of flame; guys on fire, just complete pandemonium. I think that's one of the most fun things about the game: the utter chaos you create."

"The thing to keep in mind," Castle observed, "is that when the player joins the



game, things are already happening. Players may find that they already have a base set up and units deployed, or that their opponent is already invading. Occasionally, the forces that you have in one mission, you have to keep for the next mission, so you can't use the strategy of "throw everything you have at the enemy" at first, because you cannot be sure that you'll get reinforcements."

Even novice wargamers won't have to struggle with a

seemingly impossible learning curve. "The greatest part is that it's so simple and so accessible," Castle enthuses. "That was one of the drawbacks with *Dune II*, it took a little while to learn it. With *Command & Conquer*, players just click on one of their troops, and click on where they want him to go. *Command & Conquer* is so fast and easy to get into, [which is a plus, since] there are times that players'll be dropped into the middle of a







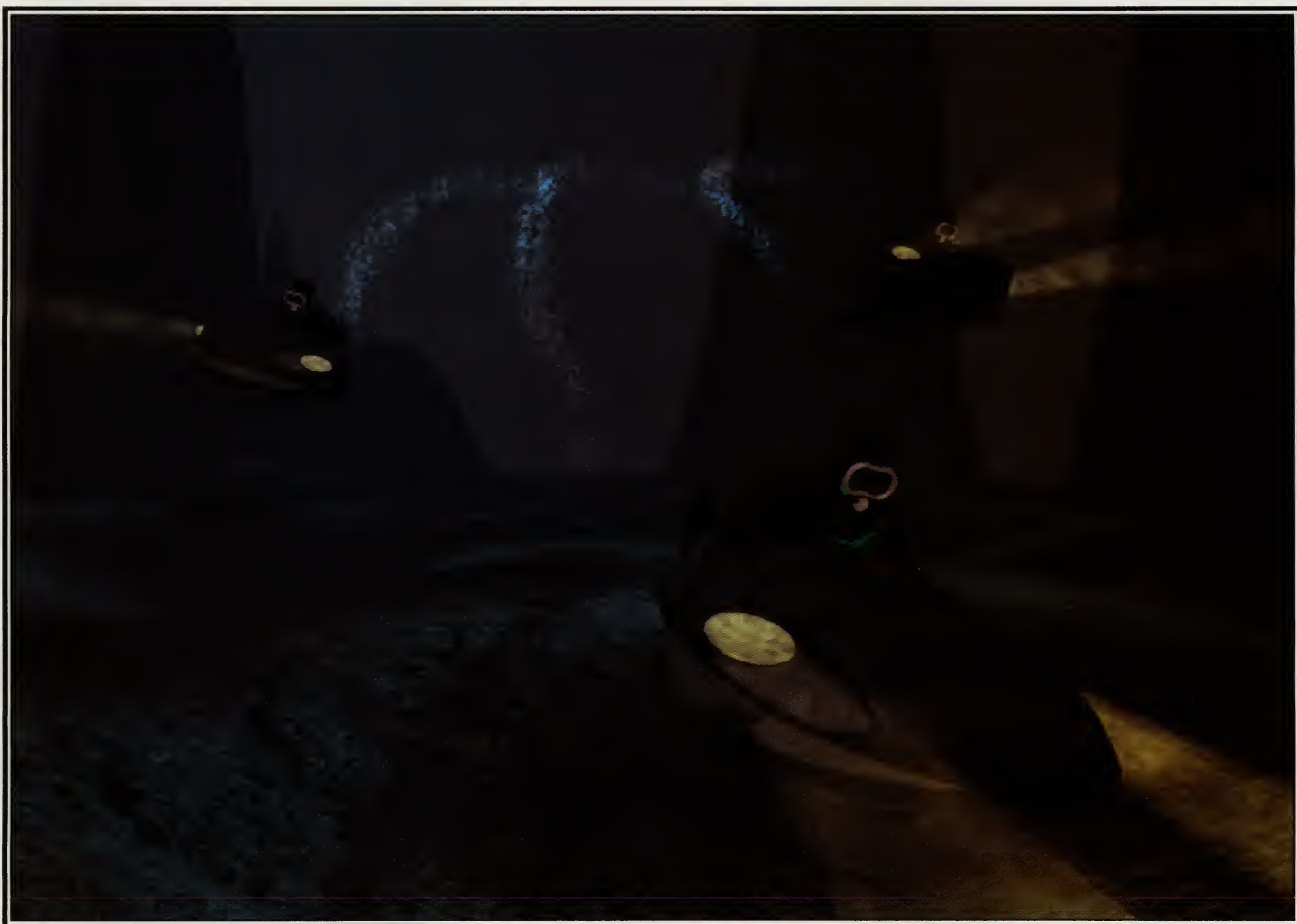
heated battle between GDI and Nod, and all of a sudden, they're in control of their chosen side. So *Command & Conquer's* main playability

point is that it's so easy to get control and start taking over."

There are a number of fixed scenarios, but players still have a lot of control. You

can do four players on the 'Net, or have only one other human and have the computer play the others. There are over two dozen possible scenarios, but the ones that the player faces depends upon the route selected to meet their goal. Also, the equipment buildup is an interesting approach. According to Erik Yeo, "You won't have the same toys as your opponent. So it's exciting to see what you're going to be up against, so that when you defeat the opponent, you can take his toys." Castle interjects, "But there are also some things that players will NEVER get to use, unless they play the other side."

From the moment that players peel the plastic off the box and insert the CD into the drive, players are brought into the game. While we don't want to spoil the surprise,





gamers should be impressed at the level of the installation procedure. Not only does the installation set up the mechanics of the game (video, sound card, etc) but also the atmosphere of the game.

*Command & Conquer* has hit the streets and wargamers are hitting the trenches with plenty of C-rations.



By land, by sea and by air!







## THE C&C COMMAND TEAM, UNMASKED!

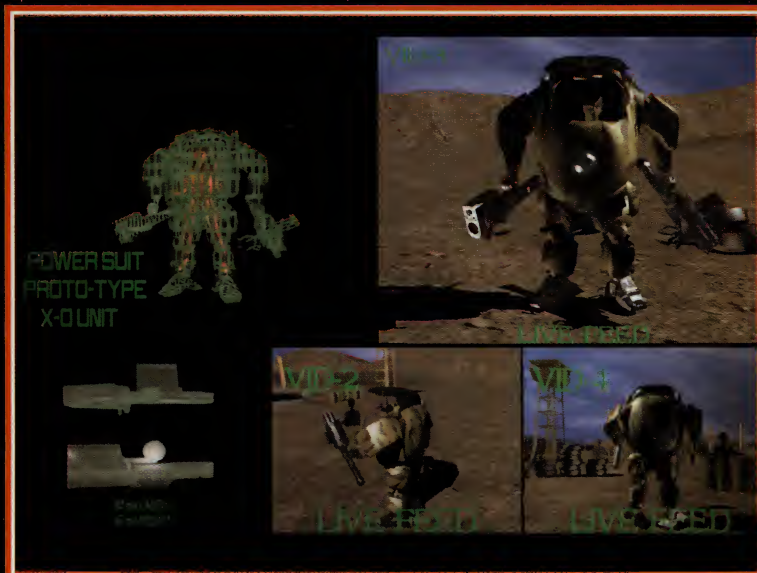
Running on the maxim that a game is only as good as its components, *Command & Conquer*, like all today's major software releases are team projects, and you can't tell the players without a scorecard. Given that, here's a partial list of the creators of *Command & Conquer*: Brett Sperry, Executive Producer; Ed Del Castillo, Producer; Joe Bostic and Bill Randolph, Lead Programmers; Erik Yeo, Lead Designer, Aaron Powell, Victor Gerth, and Matthew Hansel, Lead Artists; Paul S. Mudra, Audio Direction; Frank Klepacki, Original Soundtrack; and Dwight Okahara, Sound Effects. While this is by no means a complete list, these are indeed, judging from their past work at Westwood and other design houses, the cream of the crop.



A-10 wire mesh and final rendered view.



Power suit and attack cycle meshes.





# FLY IN THE FACE OF DANGER

BUY THIS PRODUCT, GET A MINDSCAPE PRODUCT FREE!  
**GRAB ONE!  
GET ONE  
FREE!**  
SEE YOUR LOCAL RETAILER FOR DETAILS



It's the later part of the 1930's and the small European monarch of Karanthia stands on the brink of civil war. Gigantic airships, launching and recovering their own warplanes, dominate the skies. There is no safe haven from their assault on your weakened and ravaged homeland. In the midst of this anarchy, you attempt to claim the throne by extracting a pledge of alliance from the uncooperative leaders of each community in Karanthia. Negotiation or annihilation is your battle cry.

## AIR POWER

BATTLE IN THE SKIES

*Air Power: Battle in the Skies* incorporates the best elements of flight sims, air combat, military strategy and role-playing in this violent fictional world. And, you'll find stunning 3D graphics and digitized sound effects enhance the high-resolution, fast-frame gameplay. So load up your airborne armada and set your sights on claiming the throne.

To Order *Air Power: Battle in the Skies*, call 1-800-778-2299, or visit your local retailer

© 1995 Mindscape, Inc. *Air Power: Battle in the Skies* is a trademark of Mindscape, Inc. Mindscape is a registered trademark and its logo is a trademark of Mindscape, Inc. All other products are properties of their respective holders. All rights reserved.



MINDSCAPE™

Mindscape, Inc. 60 Leveroni Court Novato, CA 94949





# RELIVE THE BATTLE OF THE BULGE BATTLEGROUND: ARDENNES

## VOLUME I



### Experience unparalleled historical realism

Battleground Ardennes™ is like no other historical strategy game you've ever played! With the revolutionary Battleview™ combat system, you can relive crucial moments during the Battle of the Bulge, the most famous American land battle of WWII. Can you hold off the advancing German war machine? Dig in with the U.S. 101st Airborne defending freedom from the Nazis at Bastogne, or ride to victory with the legendary German King Tiger tank. Take command of Peiper's infamous SS or lead a blistering U.S. counter attack to retake Stoumont!

- Platoon level action at 250 meters per hex
- Full feature scenario editor
- Extensive combat sound and video clips
- Modem to Modem play
- Drag & Drop movement and combat
- Print out instant detailed situation maps

"Like being in the middle of a fine war movie!"  
— PC Gamer —

"This is one heck of a debut for TalonSoft!"  
— Computer Game Review —

"The grand old hexgrid gets a new lease on life!"  
— Computer Gaming World —



If it's not FUN  
who cares!



The 2D Map view provides a traditional perspective for the discerning gamer.



Groundbreaking "Battleview™" combat system zooms in on Panthers leading an attack on Stoumont!

Available from: Egghead, Electronics Boutique, Walden Soft, Comp U.S.A., Borders Books, Best Buys, Babbages, Software Etc. and other fine software dealers.

Give us a call at 410-821-7282 or contact us online at: Compuserve: GO GAMEPUB C • CIS: 75162,373 • INTERNET: 75162.373@compuserve.com • AOL: Talonsoft1



Seen a good Civil War game lately?...We have!

# BATTLEGROUND: Gettysburg™

Volume II



**WE MAKE  
HISTORY!™**



Introducing Volume two of the ground breaking Battleground™ series of Historical Strategy Games! Featuring the innovative Battlevue™ combat system, Battleground Gettysburg covers the three most crucial days of the Civil War. Take control of Lee's army of Northern Virginia and whip the Yankees back to Maine or command Meade's army of the Potomac and repulse the Rebel invasion.

- Unparalleled Historical accuracy • Stunningly detailed battlefield
- Regimental level units • Elegant, easy to use Battlevue™ interface
- Play the 1st, 2nd or 3rd day or the whole three day campaign
- Scenarios include: Culp's Hill, Devil's Den, Little Round Top, Pickett's Charge and more!
- Variable command level lets you play some or all of your favorite army!
- Extensive combat sound and video clips



Available from: Egghead, Electronics Boutique, Walden Soft, Comp U.S.A., Borders Books, Best Buys, Babbages, Software Etc. and other fine software dealers.

Give us a call at 410-821-7282 or contact us online at: Compuserve: GO GAMEPUB C • CIS: 75152,373 • INTERNET: 75162,373@compuserve.com • AOL: Talonsoft1 • TalonSoft P.O. BOX 632 Forest Hill MD 21050-0632

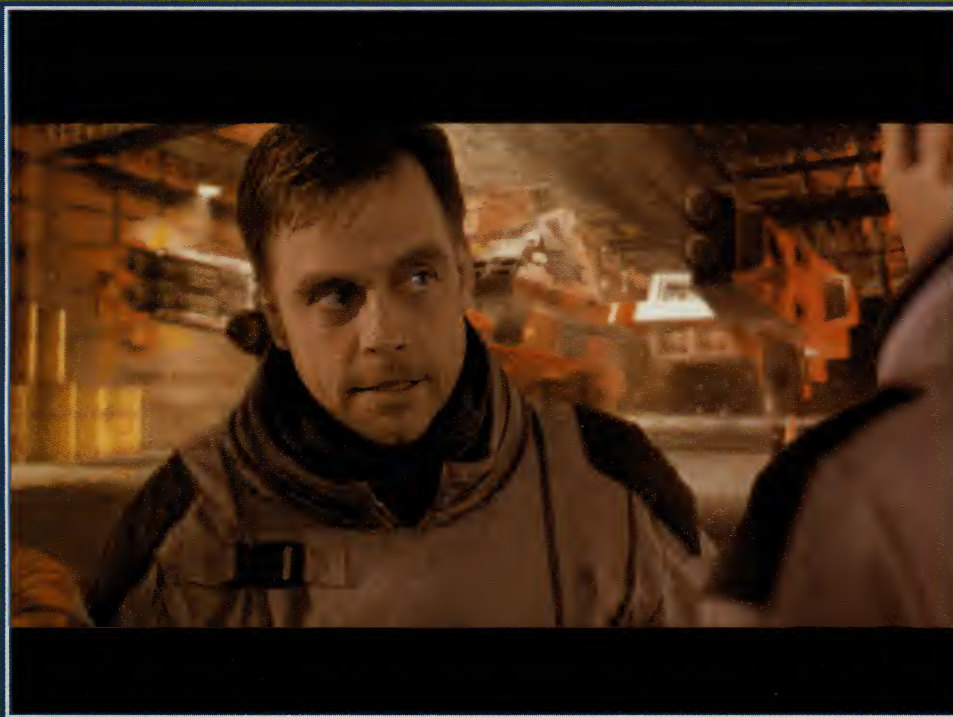


# Skywalking To Green-Screens

An Extremely Cool Interview With

## Mark Hamill

by Steve Kent



SKUNKWORKS

One of the most recognizable faces in science fiction, Mark Hamill has emerged as one of the first real stars of interactive motion pictures. Along with other respected actors like Tim Curry, Brian Keith, and Malcolm McDowell, they have formed the first generation of crossover electronic actors; trained stage and movie performers who have stumbled into a new world of computer-generated sets projected against green-screen backgrounds.

Hamill's diverse acting career made him a perfect match for this new medium. He once played Laurie Partridge's boyfriend on *The Partridge Family*, and

assayed a cowardly soldier opposite Lee Marvin in *The Big Red One*, a hardcore cult favorite from gritty auteur Sam Fuller. Of course, he is best known as Luke Skywalker, the hero of the *Star Wars* trilogy. He followed this career-making role with a fiasco called *Corvette Summer*.

Hamill has also established himself as a voice actor. He is currently best-known as the voice of the Joker, on *Batman*, the Animated Series. His first speech role in an interactive script was as the easily duped police detective in Sierra On-Line's CD version of *Gabriel Knight: The Sins of the Fathers*. Hamill also had a

speech minor role in *Full Throttle*, a hugely successful adventure game from LucasArts. Both games were animated, of course, so audiences only heard his voice.

Late last year, Origin Systems released *Wing Commander III: The Heart of the Tiger*, a live-action game in which Hamill played the role of Colonel Christopher Blair. The game was a major hit, selling over 700,000 copies worldwide.

"The people you really want to please are the fans," says Hamill. "When you read what they say on the Internet, you know they don't pull any punches, and they just loved *Wing III*."

"In theory, the filming gets easier each time," says Hamill. "[But] what happens is that each time you end up trying to upgrade the technology over all. Just the logistics of it all meant that *Wing IV* ended up being many times more elaborate in scope and budget.

"The difference between *Wing III* and *Wing IV*...*Wing III* was a novelty in the sense that I had never worked with so much green-screen. You had to constantly refer to drawings and the monitors because when you got out into the set you were just in a void.

"With *Wing IV* they had proper sets. There was green screen out the windows, but it was much more like a traditional movie."





In fact, Hamill describes the making of *Wing Commander IV: The Price of Freedom* as somewhat similar to his experience making the *Star Wars* movies. "In the case of *Wing III*, the vast majority of the background was green screen. On *Wing IV*, and in George's movies [George Lucas, producer of the *Star Wars* trilogy], you might have a gigantic set built in front of a green-screen."

Though green-screen makes the job tougher, Hamill feels that most actors are not deterred by it. "Actors are asked to imagine a lot of things from the fantastic to the mundane. The cut away diver/passenger section of an automobile is as far from reality as can be. You have stage hands rocking a car that's on mounts and people passing

Capstar (above) and shuttle (right).

## SKUNKWORKS



spotlights past your face for streetlights.

"You see it in the movie and it looks like two people driving in a car, and you never stop to ask 'where are they putting all of the filming equipment?'"

According to Hamill, there are other distinctions between *Wing Commander III* and *Wing Commander IV*. "You'll see the difference between a first time feature and a second time feature. Chris [Chris Roberts, creator of the *Wing*





A bad day at the office!

*Commander* series" took a giant step forward in terms of sophistication. It has a more cerebral feel to it. It's more about military intelligence...landing on planets and stealing information."

Hamill shrewdly observed that the series was forced to evolve in order to hold its audience. "This game couldn't be a rehash. If you want to rehash a combat-type game, you have to wait a few years for the technology to improve enough to give you a reason to [do] it."

"The fact of the matter is that the Kilrathi war is over, so Blair is retired. This one "moves" more along the lines of a political intrigue situation. The war is over and the military is having trouble coming to grips with relinquishing power after a quarter of a

century [of control]."

Of course, some of *Wing Commander III's* successful formula has carried over into *Wing IV*. There are still combat simulations, and much of the cast has stayed intact. Hamill says he enjoyed another round of work with Tom Wilson (the nerdy father from the *Back to the Future* films), the actor who plays Maniac. "Working with Wilson is a constant source of amusement. This man is seriously funny...I mean, all the time!"

Hamill also agrees with Chris Roberts that Malcolm MacDowell brought a strange sense of humor to the set. "When you see me in a two-shot with Malcolm and the camera is over his shoulder, you can be sure he's making outrageous expressions, pursing his lips, wiggling his

eyebrows, or rolling his eyes to make me laugh.

"He's a wicked, wicked prankster on the set. If he can't throw you with facial expressions, he'll out and out grab you. There's nothing he won't do to test your mettle."

Not everything was fun and games on this set, of course, but Hamill, a complete and undeniable O.J. Simpson trial fanatic who had a VCR in his dressing room recording the trial at all times, did make time to keep up with the latest legal developments in the ongoing drama.

Hamill would watch the trial between takes and update the rest of the cast as he prepared to shoot scenes. Sometimes his updates included a little dramatic interpretation. "I did my own glove demonstration with a *Wing Commander* glove," he admits. "They're a one-size-fits-all gauntlet type glove, but I arched my fingers. I didn't even have to rehearse it!"

Shortly after the completion of filming, Hamill attended a session of the trial. "I'm publishing a graphic novel with Dark Horse Comics called, *The Black Pearl*. The hero is a courtroom stenographer, so this was sort of research. I sat right behind Carmelita Simpson, O.J.'s sister."

Hamill says attending the famous courtroom had a surrealistic feel to it. He saw the people he had watched on television, but being there in person had a very different feel to it. "I looked over and saw Christopher Dardin and thought, 'Wow, he looks much taller on television'."

Colonel Christopher Blair survived a long, cruel war with the Kilrathi, an intergalactic race of giant, warlike pussy cats. The question is, can he survive the peace?

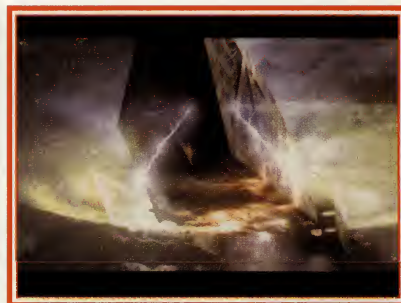
SKUNKWORKS



# Wing Commander The Next Generation

## Inside The Making Of Wing Commander IV

by Steve Kent



*Wing Commander IV*, the latest installment in Origin System's mega-bestselling series of sci-fi flight sims with plots, begins with Colonel Blair retired from active military duty after having served a pivotal role in the war with Kilrathi. He is a celebrated hero of the Confederation trying to adjust to his new life.

His retirement, however, is short-lived. As rebellion and civil war threaten to erupt, Confederation leaders press Blair back into service. Unlike previous *Wing Commander* games which were cinematic flight simulations, *Wing Commander IV: The Price of Freedom* is a political foray in which players must make

important decisions both in and out of battle. Though this game will feature some of the flight simulations that have made the *Wing Commander* series one of the popular franchises in gaming, it will also offer overtones of palace intrigue and political show-downs.

Fans of *Wing Commander III* will be happy to see that Christopher Blair, played by Mark Hamill, is not the only familiar face in *Wing Commander IV*. Comedian Tom Wilson returns as Maniac, Blair's arrogant-but-ridiculously charming rival, with his role considerably expanded from *WC III*. The powerful and angry Admiral

Tolwyn, played by veteran actor Malcolm MacDowell, has also returned, enhanced by his star turn in *Star Trek: Generations* and still able to evoke a middle-aged spark and sass that is occasionally evocative of his first great role as a charming sociopathic antihero in Stanley (Dr. Strangelove) Kubrick's *Clockwork Orange*.

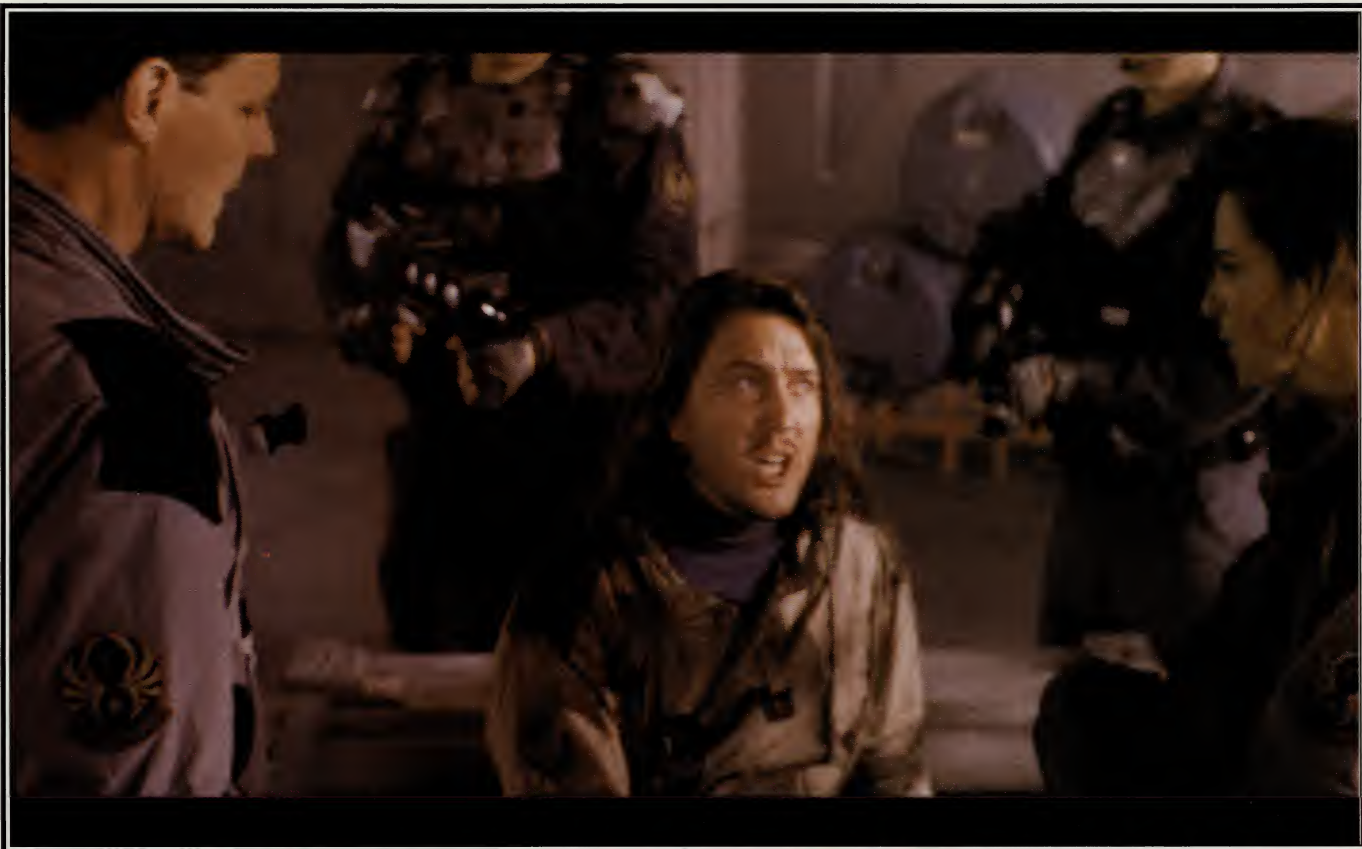
Chris Roberts, who created the *Wing Commander* series, says he enjoyed working with this cast. He describes Wilson as hilarious but very professional. "When he comes on the set he knows his lines perfectly. He's very easy to work with."

His opinion of MacDowell

SKUNKWORKS







seems to jibe with the rest of the crew's assessment: "I would describe Malcolm as very mischievous," he declared diplomatically. MacDowell who can do comedy as well as drama (witness his work in *Little Red Riding Hood* on Shelly Duvall's Storybook Theater, or his delightful performance in *Time After Time*) made a practice of shattering other actors' focus with his funny faces.

According to Roberts, this latest episode is the most ambitious game yet in what has remained a state-of-the-art series. "What we did with *Wing III*...we sort of guessed a lot of these elements would work because we'd never done it before. *Wing Commander IV* is the game where I pushed the technology the least, but it's the game where I pushed the artistic limitations the most."

Pushing artistic limitations did not come cheaply. Roberts filmed *Wing*

"But I'm sure I mailed your check!"

*Commander III* with a small cast of actors working on tiny sets with a flat green-screen for a background.\* After the scenes were shot, artists and computer animators rendered the sets over the green areas.

Most of *Wing Commander IV* was shot on real sets, however, on sound stages with a greatly expanded cast.

Though movie sets are expensive, Roberts wanted to take *Wing Commander* to the "next level." He built 37 sets. The last game had a very limited number of speaking roles. *Wing IV* has 40 speaking parts, and some scenes have more than 100 extras.

Roberts says he was able to create a better product by using real sets. "On a real set we can move the camera around, which allows us to tell the story better. There's more atmosphere, and you can put people in the background. You just feel like it's deeper, denser, and more alive.

"When you're on a com-

puter set, you're pretty much just two guys standing around talking to each other. Even if a set looks huge, it's really a very small area. On a real set, the actors can move around, they can sit, they can pick things up. You just get a lot more energy in their performance.

"We still used green screens for some of the really big sets that we couldn't afford to build. Like on the flight decks, we built a small part of the flight deck and then placed the camera to shoot over the actor's shoulders. When you see the whole flight deck, that's a computer graphic.

"I get in trouble every time I talk about it," says Roberts, "but *Wing Commander IV* is definitely the most expensive interactive movie ever. It cost over twice as much as *Wing III*. We spent over \$8 million on the filmed portions alone."

Where did he get such a generous budget? According to Roberts, Origin Systems

SKUNKWORKS



sold over 700,000 copies of *Wing Commander III* world-wide. (This figure reflects PC sales but *Wing III* is also available for 3DO, Saturn, and PlayStation.) "*Wing III's* success allowed me to spend the money I needed to make *Wing IV*."

Depending on the success of *Wing IV*, Roberts plans to make the jump into feature films with his next project. "The next page that's currently in early development is a *Wing Commander* movie," he declared, repeating a promise he'd made regarding *WC IV*. "We'd shoot the movie and at the same time shoot scenes for the game. In terms of production quality, it's very close to a movie now. It's much higher than it was in *Wing III*. When you look at it, we should just spend the extra dollar and get a movie."

#### \*Green and Blue-Screens

Film makers use green and blue-screens because they are easily masked on film. George Lucas used this technique to create the cavernous interior of the Death Star in all of the *Star Wars* movies. In *Death Becomes Her*, Meryl Streep wore a blue hood over her head in a scene where her neck was supposed to be twisted around. The light blue color vanishes so cleanly, that artists were able to laminate video clips of Streep's head over the hood.

Game publishers have generally used green-screens, though some blue-screen work has been done. Under a Killing Moon, The Daedalus Encounter, and The Seventh Guest were all filmed on using this technology.

## SKUNKWORKS





INTERACTIVE MAGIC PRESENTS

# APACHE

## The Combat Helicopter Simulation

- "From weapons control to campaign system, and everywhere in between, APACHE's just got all the competition beat cold. This is the simulation you'll be playing and playing, and playing, month after month, year after year.

***Absolutely, a must-have!"***

*-Strategy Plus, October 1995*

- **PC Gamer FINAL VERDICT: 95%**  
"Terrific flight model, countless options and missions, great gameplay. A flight game with such broad appeal that everyone from arcade players to hard-core sim hounds should delight in it."

*-October, 1995*

**Modem and multi-player networking included!**



Checkout the APACHE DEMO

75162.1202@CompuServe.com

ftp.cactus.org/incoming directory

AOL: Go Software Library/APCHDEMO.ZIP



For more information call (919) 461-0948

INTERACTIVE MAGIC PO Box 13491 Research Triangle Park, NC 27709





INTERACTIVE MAGIC PRESENTS

# STAR RANGERS

**You've Got Just Enough Time To Save The Galaxy . . .  
If You Play Smart!**

- *Your elite ranger force is on a critical mission: patrolling the outer reaches of the galaxy. Like rangers of the old west, your primary responsibilities are upholding law and order, and protecting the galactic citizens. You're armed with the latest weaponry and flying the finest 23rd century starships. But time is not on your side!*
- *You're thrust into one life or death mission after another and you've got quick decisions to make. You can hyper-space across the galaxy to protect a distant base . . . but will you have enough fuel to return to protect the closer ones? And how many enemy ships are attacking your other bases? Can you get there in time?*
- *A detailed galactic map helps you ID enemy strength and positions, as well as navigate through the galaxy to engage the enemy in one heart-pounding battle after another. But in Star Rangers, you've got to shoot straight and think smart. The citizens are looking for a hero . . . could it be you?*



PC CD-ROM



To reach us:

E-mail - 75162.1202@CompuServe.Com

On Line - On CompuServe, GO GAMBPUB (Library 17)

INTERACTIVE MAGIC • PO Box 13491 • Research Triangle Park, NC 27709 • Phone (919) 461-0948



© 1995 Interactive Magic



# Wargame Construction Set III: Age Of Rifles

*Oh Yes, There Was Life In The 19th Century!*

by Brian Workman



*Age of Rifles*, an exhilarating new series designed by Jason Ray and SSI, covers operational combat in the 19th century - from the 1840s to 1905. Different campaigns are planned, covering British expansion and colonialization, the Mexican-American War, the Civil War, and, possibly the Franco-Prussian and Zulu Wars. Over three dozen future scenarios currently on the drawing board including the Spanish-American War, the Boxer Rebellion, the South African Boer Wars, and the Great Indian Mutiny, among others. This is virtually virgin territory in the industry, and it is finally receiving some well-deserved attention.

Historically, this period gains significance for, while weapons changed, their employment tactics did not.

SKUNKWORKS

This was mainly due to the advent of the rifle. The rifle, while in its infancy, extended the range of the troops to the point they could return fire on artillery. This, in turn, started the decline of the use of lances and sabres and eventually drove all smoothbore artillery off the battlefield. But the short-sighted power brokers of the day were mired in the old school of thought. They resisted the change to new and improved tactics, that are required anytime a major evolution in weaponry occurs. Throughout the 19th and early 20th centuries, troops went into combat using the same formations as their fathers and grandfathers. This caused bloodbaths in the Russo-Japanese War and WWI. The lessons learned from these conflicts finally led

to the use of modern tactics, and left the survivors far more responsive to adaptation.

*Rifles* is a turn-based game played on hex maps with a scale of either 200 or 400 yards per hex. The smaller scale limits unit size to Regiments and Batteries, while the larger grids support Brigades. One turn represents 20 and 40 minutes of real time, respectively. The game can be played on either basic or advanced rules. The basic rules are great for instruction, as players can jump right into the gameplay. The advanced rules will send Pentagon-wannabes to the Players' Handbook for information on tactical formation, facing, deploying skirmishers, commander reassignment, chain of command, and communication traces. Play options are basic: either square off against the computer or another individual via hotseating. Novices can also set up an extensive demo and permit the computer to play itself.

Actual game play flows on the unit concept and is very simple to use. At the start of each turn, the AI updates weather and lighting, distributes supplies, moves routed units, places reinforcements on the map, and updates enemy unit positions. Then each player is allowed to issue orders (change formation, move, close assault, or fire) to their units. While one player is working though his move, the other may set his units to fire at ranges of one to three hexes. This is dependent, however, on the supply



status of the individual unit. At the end of each turn, victory conditions are checked; if met, the AI ends the game, if not, the AI advances to the next turn.

Despite the fact that our test program was an early Beta, game play was smooth. The two scenarios available ran approximately two hours each. The strategy was basic: deploy your skirmishers to increase your defense; fire on the enemy from line or supported line formations; make assaults from a flank attack column; and understand that the AI takes great exception to occupation of its objective flags even to the point of leaving other flags undefended in order to retake or protect one that is threatened.



Set for release in mid-February 1996, this title looks very exciting and well put together. From early looks, Rifles captures the period's importance, maintains easy game play, and provides maximum enjoyment. The golden age of the Rifle is coming, and its vehicle is *Wargame Construction Set III: Age of Rifles*.



SKUNKWORKS



# Su-27 Climbs For Altitude With... Ivan On Deck!



by Tom "KC" Basham

The overwhelming majority of flight simulations model US aircraft. Although there have been a few notable exceptions, such as Tornado by Digital Integration, most sims stick to "American Iron," and a disconcerting majority focus on the F-16. Mindscape and SSI have moved into new territory, producing an Su-27 Flanker simulation. Designed by a group of Russian pro-

grammers, SSI's succinctly titled *Su-27* not only breaks the defacto "American Iron" tradition, but the late beta previewed here also promises to be a hit with hard-core realism fans. Watch future issues of *PC Ace* for additional, indepth Su-27 training and technical articles.

NATO's COCOM restrictions during the cold war restricted various technology transfers to certain nations, notably the Soviet Union and communist China. COCOM included restrictions on personal computer exports to these countries, limiting exports to 286-class and below machines. For flight simulation fans in Russia, buying a 486-66 or a Pentium to run high-powered graphics simply wasn't an option. Even if they could get their hands on the latest Western flight simulations, they probably didn't have access to a machine with enough CPU horsepower to run it. In an

era where Western programmers eagerly gobble CPU cycles and immediately demand higher-powered CPUs, one group of Russian programmers led by Sergei Bezrovtychkin decided to design a hard-core flight simulation for 286-class machines.

When the Russians brought their product to Mindscape in the UK, it ran on a 286-class machine using EGA graphics. Mindscape quickly recognized the products potential, but also realized that EGA graphics would no longer impress Western consumers. With Carl Norman (of Harpoon and Harpoon II fame) producing, SSI; their parent company, Mindscape; and the original Russian design team set out to "westernize" the original product. According to Norman, the collaboration across three continents has not been without headaches. One notable problem arose when 486-class PCs were needed in Russia. "The paperwork was a nightmare," commented Norman.

*Su-27* will initially ship as a CD-ROM Windows 95 product, with a DOS version expected to follow shortly thereafter. According to Nick Grey of Mindscape, the product will ultimately support four versions: an EGA version for 386 users, a 640x480x256 version for 486DX33 users, a Windows 3.1 version also requiring a 486-33, and the Windows 95 version requiring

(Below right) The Russian cockpit.

SKUNKWORKS



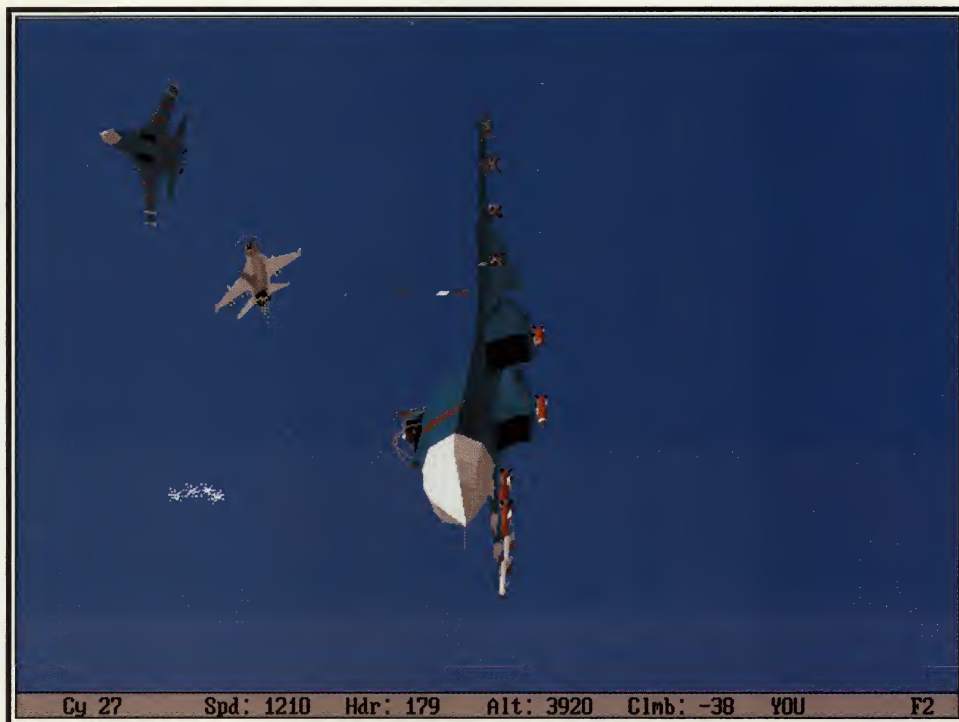


a 486DX2-66. Su-27 is reportedly the first in a series of flight simulations based on this engine.

### Menya Zavut KC

*Su-27* caters specifically to the hard-core flight simulation fan. No flight model concessions have been introduced for the sake of "playability." On the contrary, *Su-27* pilots must exercise extreme caution when operating near the edge of the flight envelope or they'll subsequently find themselves in an altitude-devouring, inverted spin. To begin with, the flight model contains proper AOA, or angle-of-attack, effects. Increasing AOA increases g-load, but additionally increases drag, subsequently decreasing speed. Further, the model accurately differentiates between AOA and flight path. In other words, the aircraft can descend when the nose is above the horizon. This not only causes more-realistic combat, but allows realistic landing procedures as well.

Further, *Su-27* explores the post-stall and high AOA flight regime. To briefly recap, an aircraft stalls any time the wing exceeds stall AOA and airflow over the wing is disrupted. When the wing stalls, it stops producing lift. Under some circumstances, especially if the stall is accompanied by a yawing motion, the aircraft departs controlled flight, meaning the pilot is no longer in control of the aircraft. For most aircraft, "departing" means "entering a spin." *Su-27* includes a variety of departures, including upright spins of varying intensity, disorienting inverted spins, and a difficult-to-recover flat spin. In general, spin recovery consists of three steps: 1) reduce power, 2) stop the yawing motion by applying rudder opposite of



the spin, and 2) gently pulling out of the resulting dive once step #2 has been accomplished. A departed *Su-27* can easily descend several thousand meters after the pilot effects recovery procedures, then the pilot still needs sufficient altitude to pull out of the resulting dive. As in the real world, a spin below 3,300 meters (10,000 feet) can be deadly.

In general, departures in *Su-27* are unannounced; one minute you're wailing on the stick, the next moment you're in a spin. Pilot reports indicate the *Su-27* offers little buffet to warn the pilot. *Su-27* players need to keep a close eye on the airspeed and AOA meters as well as operate the stick with a gentle touch or they'll find themselves spinning. Depending on how far the nose sinks, determining the spin direction can be a difficult task, especially during an inverted spin. Spin recovery always requires rudder opposite to the spin, no matter whether the spin is upright or inverted. Since the spin is rapidly eating altitude, pilots

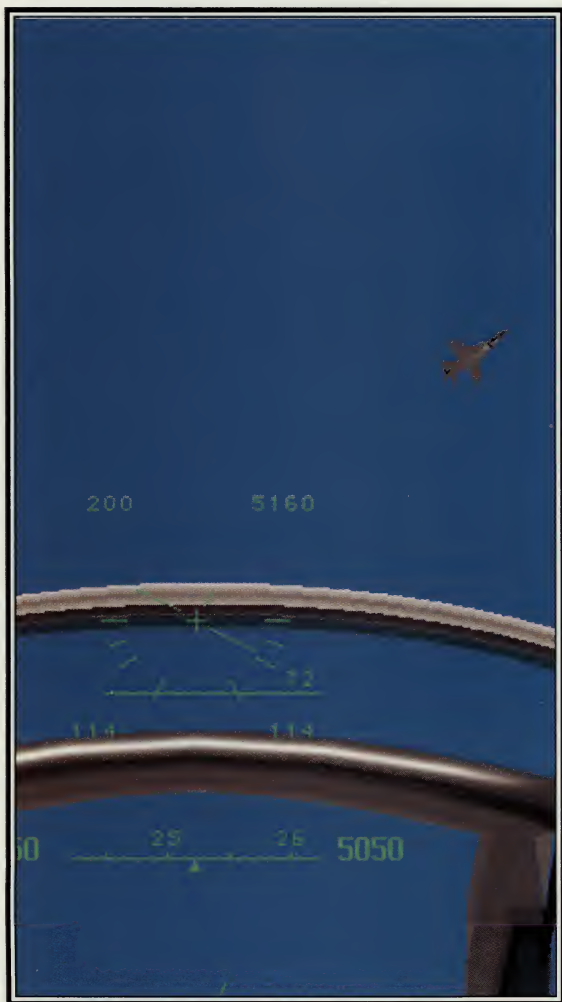
A knife fight in a broom closet!

SKUNKWORKS

must waste no time determining spin direction and applying appropriate rudder inputs. In general, the slip indicator (located along the bottom of the Attitude Direction Indicator) provides the fastest way of determining spin direction. If the ball slides to the left, apply right rudder. If the ball slides to the right, apply left rudder.

*Su-27*, like the real jet, includes an AOA limiter. Unclassified sources report varying limits from 26 to 30 degrees. In *Su-27* the AOA limiter appears set to approximately 30 degrees. Unlike the real jet, players cannot manually disable the AOA limiter. Although disabling the AOA limiter would probably plunge most players into a variety of nasty departures, it also precludes properly executing the famed "Cobra" airshow maneuver. Normally, to execute a Cobra, the *Su-27* pilot disables the AOA limiter, flies level at 450 km/h, then pulls sharply back on the stick. The nose pitches up as far as 105 degrees while the aircraft continues forward flight. Then





the aircraft continues normal flight having slowed approximately 150km/h and descended no more than 100 meters in altitude. Although the tactical value of this maneuver during combat is widely disputed, it makes a very impressive airshow stunt. Since players cannot disable the AOA limiter, however, players cannot accurately recreate the Cobra maneuver in *Su-27*. As an alternative, the "K" automatically executes a Cobra maneuver whenever the player's aircraft is within initial parameters.

*Su-27* also includes "wingtip smoke." When enabled, blue and red tracers extend from each wingtip, illustrating the aircraft's flight path. The smoke is especially interesting to watch when performing high AOA maneuvers, spinning, or executing

SKUNKWORKS

tail slides.

### Oychin Preyatno Poznokometsya

*Su-27* models a very complicated, dynamic world. Although the ground terrain is not texture mapped, the rolling hills, skies, and seas harbor a variety of objects and surprises. First, the usual assortment of ground vehicles (including SAM launchers), ships, and aircraft patrol the combat zone; however, these highly detailed objects contain several entertaining surprises. First, radar dishes and other antennas rotate while searching for targets. Second, stores (such as weapons and fuel tanks) are clearly visible beneath each aircraft's wings. Third, most objects (especially aircraft) have numerous "moving parts." Control surfaces, such as ailerons, elevators, rudders, gear, etc., move appropriately. Although primarily "eye candy," when close enough to see them move, observing control surface movements helps predict the adversary's flight path. Individual aircraft carry nationality markings as well as squadron insignia; a handy feature considering players sometimes find themselves fighting Ukrainian MiG-29s and *Su-27*s.

*Su-27* also includes wind effects, primarily noticeable as crosswinds during landing. Landing a wounded jet on one engine against a strong crosswind presents a challenge offered by few other flight simulations.

Weapons not only follow realistic trajectories, but also model engine burn times. Few weapons fire engines during the entire flight to the target. Most air-to-air missiles, for example, fire the rocket engine for the first 10 to 20 seconds of flight, accelerate to high speed, then coast toward the target. In *Su-27*

air-to-air missiles leave realistic, white smoke trails while the rocket motor is burning, simplifying visual location of inbound missiles. Further, your own missiles leave trails as they snake from your wing to your target. The sky often becomes quite congested during dogfights with missile trails stretching across the sky, bursts of chaff and flares floating around, wingtip vortices visible during high-g maneuvers, and long trails of black smoke extending from mortally wounded aircraft.

Many flight simulations display enemy aircraft larger than they should appear to ensure they are clearly visible and identifiable to the player despite the resolution limits of the graphics hardware. *Su-27*, however, does an excellent job of accurately portraying aircraft size. Although apparent size depends on monitor size, objects appear proportioned correctly. For example, an enemy aircraft two miles away displays the appropriate level of detail for an object two miles away. This, coupled with the crisp, clean graphics lets players realistically observe the adversary's wing position and predict his flight path accordingly.

### Ya nemnoga govaryu parusskie

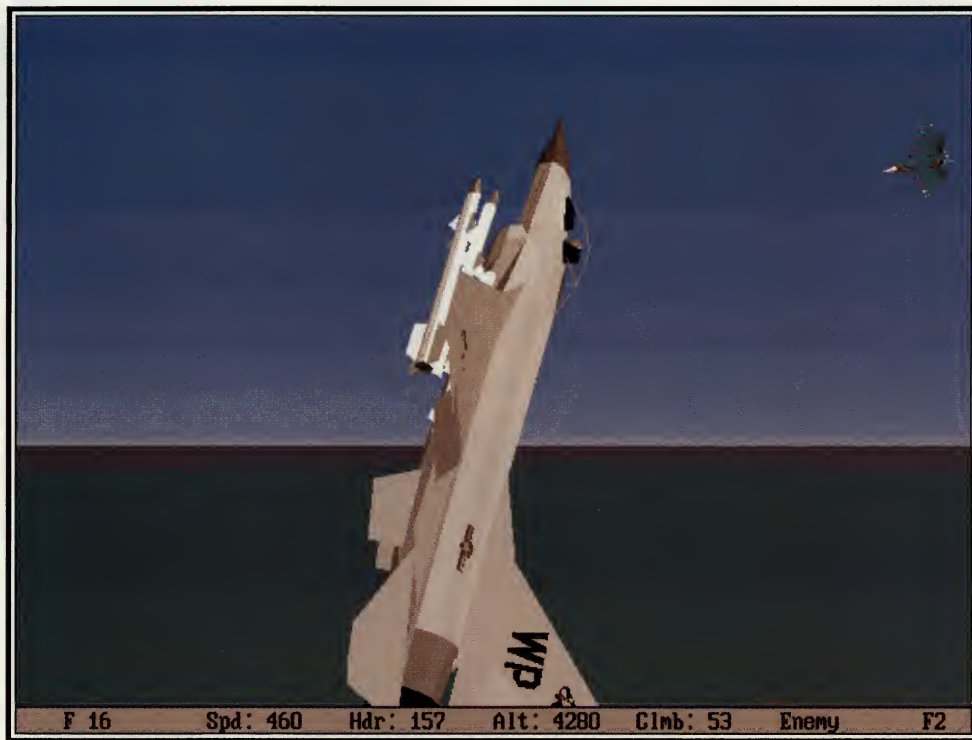
The cockpit is fully Cyrillic, measuring altitude in meters instead of feet and airspeed in kilometers per hour instead of knots. Further, Russian attitude indicators operate backwards compared to Western designs. Whereas Western indicators use a "water line" to indicate the horizon at all times, Russian designs show the aircraft's wings instead. The reversed symbology, coupled with Cyrillic characters and unfamiliar units of measure, present an additional challenge to US players while simultaneously increasing the



authenticity of the experience. Players adept with the metric systems or familiar with the Cyrillic alphabet will adapt more quickly to the cockpit. Mission planning screens, however, offer a choice: metric system or standard English units.

Users will find other Russian idiosyncrasies nestled throughout the product. For example, Russian runways tend to be rather rough. The simulated Su-27 subsequently "bounces" while rolling down the rough pavement. Russian jet engines generally have longer spooling delays than their Western counterparts. The engine RPM does not change immediately when the throttle moves. Instead, it takes a finite amount of time for the engine to "catch up" with the throttle movements. Su-27 pilots need to make throttle adjustments before they're needed so the engine can achieve the proper RPM at the appropriate time. This is especially apparent during landings when pilots should be using the throttle to control altitude during the descent.

The program includes a complex avionics model, slightly more complex than Falcon 3.0's HFR radar mode but slightly less complicated than Microprose's Fleet Defender. First, the Su-27 carries both radar and IR sensors as well as receive datalinks from A-50 AWACS aircraft. The HUD contains six different modes: navigation (NAV), beyond visual range air-to-air combat (DBV), close air combat (BVB), air-to-ground mode (ZEMLYA), longitudinal missile aiming (FIO), helmet mounted sight mode (SHLEM). The NAV mode contains four sub modes including a landing-specific sub mode. Users have complete control over the radar's



elevation and azimuth scan, but is handled differently from Falcon 3.0's HFR mode. In F3, the pilot controlled the width and height of the APG-66 scan. In *Su-27*, the width and height of the scan remain constant while the player moves the center of the scan zone. If the target aircraft maneuvers outside of the radar scan, it will disappear from the multifunction display (MFD) unless a nearby AWACS aircraft maintains contact and datalinks the information to the Su-27.

#### **Ponemyyu tolko nemnoga slova**

*Su-27* includes a complex damage model comparable to Digital Integration's Tornado. Few simulations offer the opportunity to fly a damaged bird back to base. For those of us who enjoy such challenges, *Su-27* is a rare treat! Further, damage works both ways: one missile will not always down an enemy aircraft. Initially, *Su-27* will not support network play. Norman says the first release will include only direct-connect multiplayer modes. SSI hopes to add modem and network

play later, but are making no promises. *Su-27* comes with one of the most complete, well-designed manuals ever shipped with a simulation. On the negative side of things, pre-release betas available at press time utilized a clumsy, awkward user interface. The mission editor is especially awkward.

If transported through a subspace anomaly, *Su-27* could easily have been *Falcon 3.0*'s sequel in an alternate timeline. While Spectrum Holobyte has drug its feet, *Su-27* seems to be filling the market slot originally allocated for the long-awaited *Falcon 4.0*. With clean, detailed graphics, an excellent flight model, a complex avionics suite, tons of entertaining visual effects, and a first-class manual, *Su-27* promises to remain on players' hard drives for quite some time. Watch future issues of *PC Ace* for in-depth *Su-27* training articles!

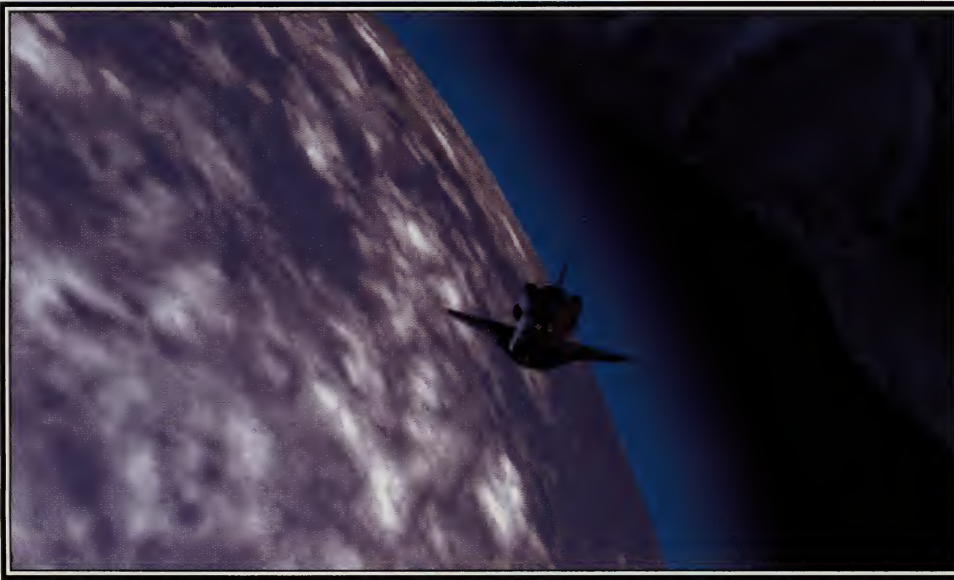
**SKUNKWORKS**



# Spielberg Digs In

## A Dream Team Of Pop Cultural Icons Collaborate On LucasArts Latest Project: THE DIG

by Laurie Yates



Steven Spielberg. George Lucas. Industrial Light and Magic. Orson Scott Card. Names to conjur with.

And they're all involved in *The Dig*, LucasArts latest exploration into the cutting edge of multimedia adventure gaming. *The Dig* elaborates on the popular engines from earlier LucasArts software hits, such as *Loom* and *Indiana Jones and the Fate of Atlantis*.

### Collaboration of the Experts

The project's genesis was an idea developed by vaunted filmmaker, Steven Spielberg (*Jaws*, *Schindler's List*, and the *Indiana Jones* films among many others). Spielberg envisioned a game that "conveyed the alien feel of *Forbidden Planet* and the fallible humanity of *The Treasure of the Sierra Madre*." Sean

Clark, *The Dig's* project leader, rose to the challenge and created a story with depth, complexity, and real envelope stretching character interaction. Clark observed, "It's been an incredible experience to take an idea from Steven and then craft a game of this magnitude. Since Steven is an avid gamer, my

team and I made story and gameplay our top priorities."

Artists from LucasArts and Industrial Light & Magic combined their talents and technologies to generate several special effects for the game. While the focus of the special effects is on objects (asteroids, planets, and alien ships) moving through space, the artists incorporate techniques such as morphing, lens flares, prism effects, and warping star fields. The realistic, but still unearthly, extraterrestrial characters and backgrounds are composited with both two- and three-dimensional artwork.

Orson Scott Card, a Hugo and Nebula award winner (*Ender's Game* and *Speaker for the Dead*), provided additional input by working with Clark to write the game's dialogue. Even the music was touched by a great composer. If gamers listen carefully,



SKUNKWORKS





behind the words and sound effects, they will discover a Wagnerian-inspired score. The release of *The Dig* is also the keystone of an entertainment collaboration. Warner Books will be releasing a nov-

storyline with complex and dynamic characters. The gamer's surrogate is Commander Boston Low, a NASA veteran, who is on a routine mission to blast an asteroid currently in an unsta-

## SKUNKWORKS

into an alien spaceship, and the threesome is transported to a strange, dangerous, and seemingly deserted planet—until odd apparitions appear. Through a smart cursor interface, players can explore and experiment with their environment. As the game progresses, the gamer learns about the former inhabitants of the planet: a species that discovered immortality and now exists in a ghost-like state. As the crew of the space shuttle seek a return to Earth, they learn that the only way is by satisfying the needs of the alien species.



elization of the game, and EMI will release the soundtrack and an audio drama

### Your Mission, Should You Choose to Accept It

The game experience centers around an original

ble orbit around earth into a stable rotation. His two crewmates for this journey are geologist Ludger Brink, and journalist, Maggie Robbins. Unfortunately, this mission is anything but routine.

The asteroid transforms

If *The Dig* lives up to the standards it set in the early cuts of the game, science fiction gamers should be willing to join in Spielberg's vision and LucasArts' reality.



# Essential Wargamer:

## A Holiday Guide To Building Your Wargame Collection

by James R. Jones III

### PC ACE BUYER'S GUIDE

Today you lost most of your 5th Marylanders in the Battle for Little Roundtop. Yesterday your supply line was bushwhacked by one dozen Tiger tanks in your push across the Rhine, and tomorrow you're expecting heavy air attacks from Argentinean fighter/bombers in the frigid waters off the Falklands. But wait! Put down your intelligence reports about possible Exocet launches from the Port Stanley area. Have you taken a good look to confirm that you're ready for a hot Christmas season? Well there is no time like the present. Here's a checklist of what every serious wargamer should have on the bookshelf by year's end.

These titles were selected using the primary criteria that all wargames must pass to be considered classics, the "trial by fire" by the end-users. These titles exemplified themselves in the areas of 1) playability, taking the sophisticated environment of combat and simplifying it for all users, 2) authenticity, providing a realistic presentation of an actual engagement or a hypothetical battle, and 3) replayability, offering features that allow you to go back and try a different strategy and "learn" from the engagement. Listed below are some of the titles that should be on any wargamer's holiday wish list.



#### Panzer General

*Panzer General* on CD, published by SSI, is a WWII wargame that allows you to choose from over 350 unit types as you command Allied or Axis resources, with an emphasis on Germany's conquest of Europe. Select one of the 36 scenarios or play in Campaign mode in this turn-based hexmap wargame. This strategy game can take you from Poland all the way to the Whitehouse steps in Washington, DC. The target during battle is to take all the victory objectives on the battle map using the "blitzkrieg" attack, which means conquering your enemies quickly, effectively and ruthlessly. In the Campaign mode, you will serve as a new general at the outset of the war. You begin your conquest of Europe with an attack on Poland and move forward on both the

Eastern and Western fronts from there. How well you do in each scenario has a direct impact on the course of the war. Can you invade and conquer England early in the war, limiting the impact of U.S. involvement in the European Theater, or will German cities be under attack within the first months of the conflict? *Panzer General* allows you to change history to the extent that you may be able to land troops in the United States to assault Washington, DC if you do well enough in the game.

Units come in 18 classes covering aircraft, surface naval ships, submarines and ground equipment. Hundreds of units are available within those classes, ranging from individual infantry units, specific bomber and fighter aircraft and artillery for 15 countries. Units that survive in battle gain in strength and



become significant wartime assets. Three levels of play challenge you from easy through advanced modes. You can gain additional forces if you exceed the win conditions for scenarios. *Panzer General* is large in scope, with the strategic situation taking front stage over the tactical. The game's AI allows for replayability and a noticeable difference in the levels of difficulty. *Panzer General* features quality SVGA graphics and authentic photographs and film footage from WWII. SSI is using this solid wargame engine in the development of *Allied General*, a sequel to *Panzer General*.

### Great Naval Battles III: Fury in the Pacific, 1941-44

Strategic Simulations, Inc. continues the *Great Naval Battles* series with *Fury in the Pacific*. This CD wargame recreates most of the major and minor naval engagements in the Pacific Theater during the WWII years of 1941-1944. You select whether to fight for the Imperial Japanese Navy or the U.S. Navy. Available units for the game include all the major American and Japanese ships and aircraft of the Pacific Theater. GNB III has an expanded set of aircraft and ship types as well as the ability to include submarine operations with other strategic naval movements. This turns out to be big plus for the game because it allows the submarine force, the Silent Service, to be the eyes and ears for your Carrier Task Forces. Another nice addition is the structural damage ratings for all ship classes. Damage inflicted by heavy caliber guns is not treated the same as hits from lighter caliber guns. Another new feature of this sequel is the Commander-in-Chief mode,

which lets you customize the effectiveness of certain weapons. The improved Allied torpedoes are a must have.

Several features extend game replayability, including a Random Battle Generator, Customizer and a Scenario Editor. Using the Random Battle Generator provides 10 orders of battle for each side, allowing for over 100 random scenarios. Available for American and Japanese forces, the Customizer provides a means of adjusting the effectiveness of a variety of air ops, weapons, campaign and tactical values. The Scenario Editor gives you the option of creating scenarios and campaigns from small engagements to task force battles. You decide how many and what type of ships and aircraft will be involved in the scenarios, base assignments and deployment. With the quality graphics and gameplay as well as the new features and upgrades, *GNB III* is a must have for your wargamer's bookshelf.

### The Civil War

The Civil War, published by Empire Interactive, is a strategy wargame spanning the American Civil War from 1861-1864. You can play as the commander of the Union or Confederate forces, planning and fighting every major battle and campaign of the war. Troop deployment at the beginning of the game is historically accurate, with your strategic and tactical decisions affecting the outcome of the war. The scope of the game in Campaign mode is broad, providing a complex strategy game covering the east coast of America. Fortunately you specify which units you want to control independently and which you want under auto computer



control. In addition to Campaign mode, four historic battles (1st Bull Run/1st Manassas, Shiloh/Pittsburgh Landing, Wilson's Creek/Oak Hills and Mill Springs/Logan's Cross Roads) are also provided. If you select a historic battle, you will have regimental command of the encounter on a realistic 3D battlefield where each soldier is shown. The 3D battlefield is also available in Campaign mode for major battles, or you can let the computer calculate the outcome of the battles.

You adjust the difficulty level for the game via realism settings such as a fatigue factor, terrain effects, supply and resources. These settings are outlined in the manual so you know exactly what the impact of a change will be on gameplay. Factors you will look after in the game include details such as recruiting and training armies, building fleets and using naval assets to bombard enemy towns, setting up blockades, improving railroads and constructing fortifications. You decide whether to move armies by land, sea, rail or river. Units include artillery, cavalry and infantry and can be moved independently on the mapped battlefields. The documentation includes "Battle in the Civil War", a 48-page book that describes strategies used by both sides during the war and





Photo By Robert Genat  
/Arms  
Communications

provides tactical data and attack formations. Additional help and information is provided in the game manual and through an on-line encyclopedia that includes essays on battles, historic leaders and strategic information. The game score is graphically displayed on the Campaign Screen as a red or blue bar representing the population values of the towns and cities under Union or Confederate control. Once one side has control of a defined percentage of the populated areas, the victory condition is met. *The Civil War* has solid SVGA graphics and multimedia effects and is modern capable.

### Aces of the Deep

One of the best wargames from Dynamix is *Aces of the Deep* on CD, which covers U-boat operations in the North Atlantic during WWII. You are the commander of a U-boat in the German Kriegsmarine and can select between single mission, training or campaign modes. Sink enemy merchant ships or naval craft using your deck guns or torpedoes. A nice feature that adds tension to the game is the evolving

technology and tactics by each side as the war progresses, including new weapons, detection systems and countermeasures. A detailed paper map included with the game shows each patrol area. An adjustable realism panel allows you to adjust the difficulty of such factors as ammunition, weather conditions, size of the convoys, air support, torpedo performance, reload time, repairs and fuel. In fact, you can play *Aces of the Deep* as close to reality as you want without getting wet. The harder, or more realistic, you make the mission, the greater your score will be when you win your objective. You are ranked according to tonnage sunk against your own saved games or historic aces from WWII as shown in the Hall of Fame screen.

The manual is excellent and provides an extensive historical overview, reference section and archive photos of U-Boat operations in the North Atlantic. *Aces* has incredible SVGA graphics for both the surface action sequences and periscope attack views. The graphics and views, coupled with an accurate mission/scenario

series and authentic control system for your submarine, make *Aces* a shoe-in for your holiday shopping list. You may also want to look for an upgraded version of *Aces*, released as *Command Aces of the Deep*, on store shelves now. This incredible upgrade package has full Windows 95, modem and network support and amazing voice recognition technology that allows you to give verbal commands for gameplay actions.

### Carriers at War II

The disk-based *Carriers at War II* by Strategic Studies Group is an older game, but is still available through catalogues and is a worthy addition to any wargamer's bookshelf. The game covers fleet carrier operations in Southeast Asia during WWII. The numerous scenarios will challenge you to learn carrier tactics and operations, especially the time-honored method of search-identify-attack. Proper planning, weather and luck (favorable computer AI) lead to classic engagements and recreate an era in surface naval warfare when long-range combat was new and the role of carriers was still being defined. Solid VGA graphics and good sound effects lend to a credible wargaming environment. *Carriers at War II* is challenging for both novice and experienced wargamers. The unit control interface is easy to learn and quick to master. Detailed carrier operations include sequences for combat air patrols, long-range search and strike planning. A Construction Kit is available as a separate product and allows you to build and customize scenarios that can be played in *Carriers at War II*.

Game scenarios include

PC ACE BUYER'S GUIDE



an extensive training scenario; operations in Malaya, Java and the Indian Ocean; and two of the toughest battles you'll ever play in a wargame: the grueling engagements of Leyte Gulf and Okinawa. Nice touches in the game include scenarios for hypothetical engagements such as a battle fleet engagement between America and Japan in the bi-plane bomber days of 1936 and even a climatic assault on the Japanese mainland in the Spring of 1946. The documentation includes a detailed section of data cards that provide ship speed, ship strength, sustainable damage and other pertinent data. Appropriate data is also provided for aircraft in this section.

#### **Battleground Ardennes: Battle of the Bulge**

Newcomer to wargames TalonSoft entered the market with *Battleground Ardennes: Battle of the Bulge*, a historical strategy game for CD. This impressive first game for TalonSoft covers the Battle of the Bulge in the Ardennes forest in the region of Belgium and Luxembourg from the battle onset on December 17, 1944 to January 2, 1945. In mid-December of 1944, Germany initiated what later would be known as the Battle of the Bulge. Nazi forces pushed hard in a counterattack against Allied forces encroaching into German-held territory. *Battleground Ardennes* allows you to play dozens of historic scenarios as either the German or American forces. For each scenario, you must capture or hold certain objectives and eliminate as many enemy units as you can. Every unit you lose decreases your chances of victory in battle. The interface includes a flat



US Navy Photo By  
Fred Maroon

hexbased battlegrid as well as an excellent zoomed-in 3D map and combat system for the battlefield. At 250 meters per hex, this is a "whites-of-the-eyes" combat engine. A sophisticated "fog of war" setting increases gameplay tension by limiting your view to only units you can see based on distance and weather. This turn-based game uses phases to give provide control over offensive and defensive measures. *Battleground: Ardennes* gives you ready access via mouse click to unit information such as attack strength, movement allowance, assault and defense values, range and morale. Informational icons also appear with the unit data, showing visually whether the unit has fired, moved and other relevant information.

The AI selection feature of the game allows you to specify an AI for both the German and American sides, from no computer control to complete computer control. A full-featured scenario editor is provided. The game makes good use of sound, SVGA graphics and video effects and allows you to print out detailed situation maps. *Battleground: Ardennes* is

Windows 95 compliant and modem capable.

#### **Empire II: The Art of War**

New World Computing continues its Empire series with *Empire II: The Art of War* on CD. Empire II provides the flexibility for you to test via computer your theories and philosophies on the craft and art of war. The emphasis of the *Empire* series has changed from one of strategy and tactics to what the manual describes as grand tactical. In *Empire II*, your objective is to win the battle, not the war. Select from pre-defined scenarios or use the full-featured game editor to create your own battle scenarios. During gameplay you are the commander of up to two forces as you struggle to gain control of as many strategic locations as possible. Key gameplay issues revolve around unit movement, sighting distances, fatigue factors and classic wargaming strategies. You will delight in Empire II's classic engagement scenarios. Test your abilities in the battle for Agincourt with King Henry V, the battle for Cannae against Hannibal or, for a real challenge, the Battle of Waterloo. Or you can play the





entire engagement and learn from any mistakes you made in the battle history replay option. SVGA graphics and good music and sound effects enhance the gameplay.

If you enjoy building custom scenarios with incredible detail, you'll love the scenario editor provided in *Empire II*. Using the editor, you can create a new scenario or edit pregenerated scenarios. This full-featured editor allows you to set factors such as terrain, climate, technology, rules of combat, morale and win conditions. The editor also provides the capability to create or import your own icon artwork, allowing you to customize the appearance of the battlefield. *Empire II* lets you to recreate historic battles as well as ones only you could imagine. *Empire II* supports modem and network capability.

#### **Across the Rhine**

*Across the Rhine* by MicroProse allows you to take part electronically in armored combat in Western Europe during 1944-1945. This CD

wargame can be condensed as the U.S. Army takes on the German Wehrmacht. You can control a single platoon, a company or a battalion for the German or American forces. Choose to lead historical divisions such as the American 4th, 7th or 10th Armored Divisions or the German 11th, 116th or Panzer Lehr Divisions. You'll participate in key engagements including Operation Market-Garden, the Battle of the Bulge and the Relief of Bastogne. Your exceptional performance will earn you medals and advancements.

This tactical game begins in 1944 after the Normandy invasion in France and ends with the conclusion of WWII. You are a career army man who can choose from one of six historic campaigns or one "hypothetical" campaign. The numerous tactical decisions you'll face include designating formations, probing, delaying and counterattacking. *Across the Rhine* features quality SVGA graphics, an effective and game-enhancing 3D view from the tank turret, realistic sound and stirring music. You can change the level of diffi-

## **PC ACE BUYER'S GUIDE**

culty and realism for morale, replacements, intelligence information and other wartime factors. The "realism panel" and the game editor, called Battle Builder, give you the chance to practice the difficult art of using armor at the right place and in the correct way. Although you will need to read the manual before playing *Across the Rhine*, you will find many hours of rewarding gameplay and a quality wargaming experience from this title. The added feature of a bonus CD and a separate book on the history of the armored battles of the period give you plenty of information to learn about this period in WWII history. The bonus CD for Windows features over 40 minutes of archive WWII film footage and maps of the armored conflicts after D-Day. Considering the level of detail, the bonus CD and the quality of the gameplay, this title should definitely find a spot on your wargamer's bookshelf.

#### **AEGIS: Guardian of the Fleet**

Published by Time Warner Interactive, this modern-day naval wargame focuses on the strategy and tactics of the U.S. Navy's formidable AEGIS-class cruiser. With over 60 mission scenarios that span conflicts ranging from hypothetical engagements off the Falkland Islands to actual scenarios during Desert Storm, *AEGIS* offers a modern naval wargamer a lot of bang for the buck. Actual sensor systems and weapons parameter have been meticulously recreated and lend the game an accurate look-and-feel of today's surface naval warfare. You control all aspects of how and when to employ sensors and weapons and are scored based on mission objectives and debrief reports.



You can play a single-mission or an entire career as you gain experience in dealing with newer and deadlier threats. Your missions not only cover fleet protection and escort duties, but also power projection using Tomahawk and Harpoon missiles for long-range strikes. The three levels of game AI react to your moves differently, giving the game strong replayability. Adversary tactics are either recreated out of historical accounts or use modeled

Soviet doctrines. Digitized footage from the Department of Defense, SVGA graphics and high-quality sound effects add to the authenticity of this top-drawer wargame.

This should be an exciting holiday season for computer wargamers. It's encouraging to see wargame developers incorporate new battle technologies, full-featured scenario editors, gorgeous graphics and multimedia effects into today's war-

games. In addition, with the advent of Windows 95, more and more of the newest wargames are incorporating the latest technologies, such as voice recognition, in a bid to be the best. You, the avid wargamer, will be the beneficiary in this high-technology competition, as wargames continue to get better and better.

### Learn from History

The lessons of History are as applicable to wargamers as they are to Generals. Fortunately, much of our valuable heritage remains preserved in the warehouses of mail order houses and publishers alike, and can be had for a song. Swap meets are also great locations to pick up some of the more arcane members of this list. As such, the wisest wargamers would do well to flesh out their wish lists with war wisdom from the past. Here, categorized by period and focus, are just a few of the best of the backlist. Make sure you buy a big enough stocking!

#### Ancient/ Feudal

Bandit Kings of Ancient China (Koei)  
Conquest of Japan (Impressions)  
Sword of the Samurai (MicroProse)  
Walls of Rome (Mindcraft)

#### Napoleonic/Revolutionary

Battles of Napoleon (SSI)  
Liberty or Death (Koei)

### Civil War

Decisive Battles of the Civil War Vols. I-III (SSG)  
No Greater Glory (SSI)  
The Blue & The Grey (Impressions)

#### World War I

Jutland (Software)  
The Great War (Sorcery) (SSI)

#### World War II

Action Stations (Conflict)  
Analytics (RAW)  
Carrier Strike (SSI)  
Clash of Steel (SSI)  
Command HQ (MicroProse)  
Great Naval Battles Series (SSI)  
Iron Cross (New World) (Computing)  
Pacific War (SSI)  
Panzer Battles (SSG)  
Rommel (SSG)  
Second Front (SSI)  
V for Victory Series (Three Sixty)  
War in Russia (SSI)  
Western Front (SSI)  
White Death (RAW) (Entertainment)

\*\*\*

#### Korea

Conflict: Korea (SSI)  
MacArthur's War (SSG)

### Vietnam/Modern

Red Storm Rising  
Microprose  
Seal Team (Electronic) (Arts)  
The Harpoon Series (Three Sixty)

#### Sci-fi/Fantasy Combat

Breach 3 (Omnitrend)  
Conquered Kingdoms (QQP)  
Master of Orion (MicroProse)  
Overlord (Virgin)  
Reach for the Stars (SSG)  
Star Legions (Mindcraft)  
Sword of Aragon (SSI)  
When Two Worlds War (Impressions)

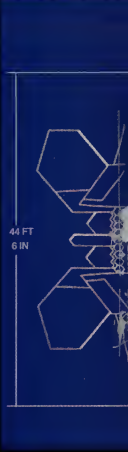
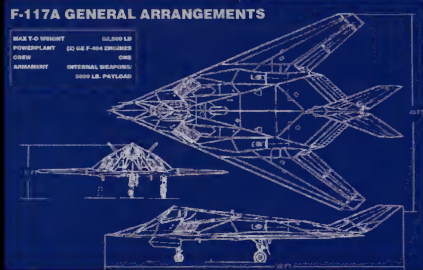
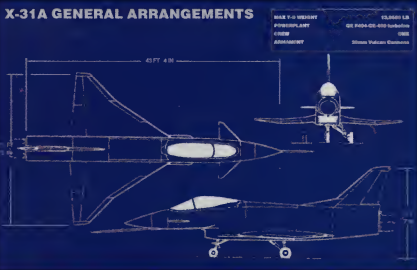
#### Generic

Empire Deluxe (White Wolf)  
The Lost Admiral (QQP)  
The Perfect General (QQP)

US Navy Photo By Fred Maroon



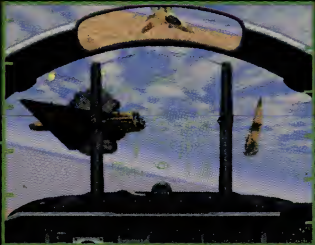
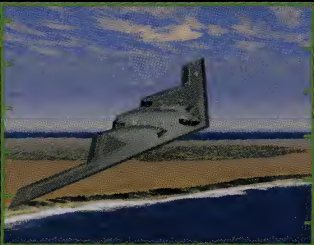
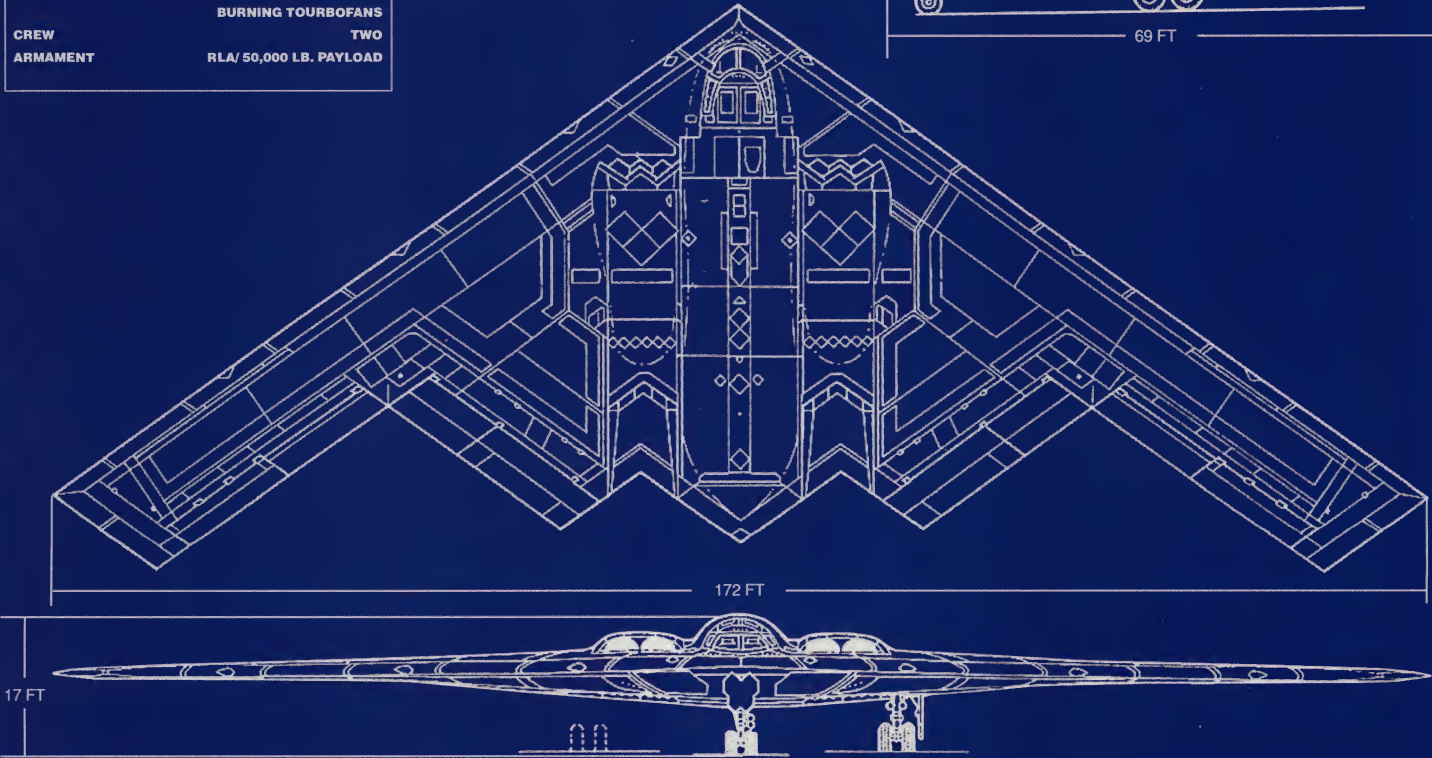
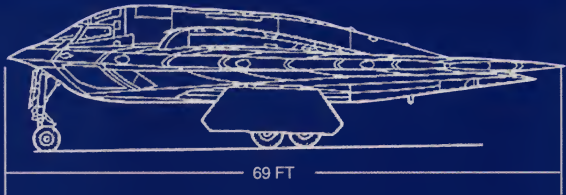




THEY'RE BEING BUILT TO DESTROY COUNTRIES  
 THAT DON'T EVEN EXIST YET.

# B-2A GENERAL ARRANGEMENTS

MAX T-O WEIGHT: 376,000 LB  
 POWERPLANT: (4) GE F118-GE-110 NON-AFTER-BURNING TURBOFANS  
 CREW: TWO  
 ARMAMENT: RLA/ 50,000 LB. PAYLOAD



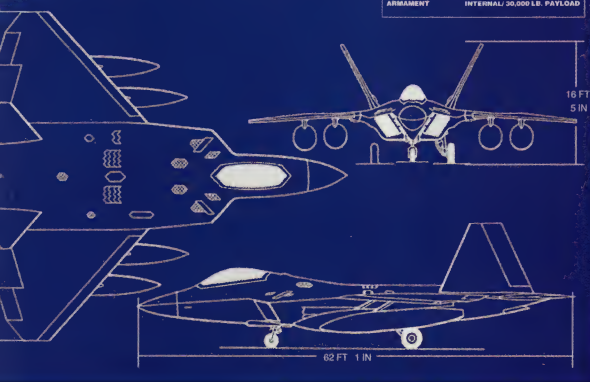
IF NOT BEING DETECTED IS YOUR THING, CLIMB ABOARD THE B-2 STEALTH BOMBER. IT TOOK AN ARMY OF ENGINEERS TO MAKE YOU INVISIBLE TO ENEMY RADAR. AND WE GOT ALL THE SPECS.

ADVANCED 3D GRAPHICS AND DIGITIZED SPECIAL EFFECTS ADD TO THE REALISM. ALSO MULTIPLE STATES OF DAMAGE (WATCH YOUR TARGET EXPLODE INTO BITS) AND DIGITIZED EXPLOSIONS.



# F-22A GENERAL ARRANGEMENTS

MAX T-O WEIGHT 60,000 LB  
 POWERPLANT (2) PRATT & WHITNEY F119-PW-100  
 CREW ONE  
 ARMAMENT INTERNAL 30,000 LB. PAYLOAD



BE THE FIRST CIVILIAN TO EXPERIENCE AIR COMBAT IN THE ADVANCED TACTICAL FIGHTERS OF THE EARLY 21ST CENTURY IN THIS SEQUEL TO US NAVY FIGHTERS (THE STANDARD FOR SIMULATIONS IN 1995), FLY AIRCRAFT THAT ARE JUST STARTING PENTAGON TEST PROGRAMS.

THIS SIMULATION IS BASED ON EXCLUSIVE, AUTHENTIC AND UP-TO-DATE INFORMATION FROM JANE'S INFORMATION GROUP (THE WORLD'S LARGEST PUBLISHER OF MILITARY INFORMATION). IT INCLUDES A FULLY INTERACTIVE JANE'S ALL THE WORLD'S AIRCRAFT GUIDE WITH BLUE PRINTS, WEAPONS INFORMATION, ENGINE DIAGRAMS, AND COCKPIT LAYOUTS. YOU CAN EVEN PULL UP VIDEO FOOTAGE OF THE ACTUAL FIGHTERS IN TEST PROGRAMS PULLING THE SAME MANEUVERS YOU PULL IN THE GAME.

78 >



THIS IS YOUR OPPORTUNITY TO EXPERIENCE U.S. TACTICAL AND TECHNOLOGY TRENDS, LIKE THE X-31'S POST STALL MANEUVERS AND HIGH ANGLES OF ATTACK. IN SCALEABLE RESOLUTION MODES FOR MAXIMUM PERFORMANCE ON MULTIPLE PROCESSOR SPEEDS (320 x 200 ALL THE WAY TO 1024 x 768).

ROUTE



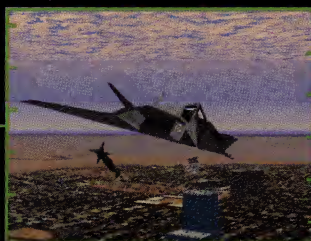
30



57

< ARM 10

MODEM AND NETWORK PLAY LETS UP TO 8 PLAYERS DOGFIGHT IN AUTHENTICALLY DETAILED F-22's. SUPERCruise THROUGH FULLY TEXTURE MAPPED TERRAIN RANGING FROM DESERTS TO ISLANDS TO CITIES.



21%

3 ALL-NEW AIR POWER CAMPAIGNS OF THE FUTURE WITH DIFFERENT AND UNIQUE THREAT ENVIRONMENTS. THE KIND THAT REQUIRE THE EXTREME BOMBING ACCURACY OF THE F-117A TO TAKE OUT HARD TARGETS. JUST BEWARE THE AIR DEFENSES OF THE NEW ENEMY FORCES.

## JANE'S

### ADVANCED TACTICAL FIGHTERS™

COMBAT SIMULATIONS

FROM ELECTRONIC ARTS STUDIOS  
<http://www.ea.com/janes.html>  
 (for more information)



# Quarks Quasars & Question marks

## The Essential Guide To SF Gaming

by Bill Kunkel

PC ACE BUYER'S GUIDE

The meaning of the term "science fiction fan" has undergone one hell of an evolution in the last half century. If you were an SF fan in the '40s, for example, you probably didn't even call yourself that. Hugo Gernsback, the father of modern science fiction and the man after whom the annual "Hugo" awards are named, called it "stf", or "scientifiction" back in those halcyon days when scientifiction fans numbered in the thousands and even the biggest conventions boasted only a hundred or so attendees. It was a proud and lonely thing, indeed, to be a fan of "that crazy Buck Rogers stuff" in the '40s; scientifiction fans mostly remained in the closet, coming out only when they recognized a fellow devotee with whom they could bond in secret.

In the '50s, scientifiction became simply SF (or "sci-fi", though the latter appellation was regarded with disdain by hardcore fans for decades), and, for the first time, there were significant numbers of people who considered themselves fans of the genre but did not actually read any SF.

These were the first media science fiction fans; they doted on films like *Forbidden Planet*, *The Thing* (from *Another World*), *Them*, and *When Worlds Collide*. They read EC's line of SF comics, listened to radio shows such as Arch Obler's *Lights Out!*, and later in the decade became faithful fans of TV shows such as *Twilight Zone* and *The Outer Limits*.

By the '60s and '70s, there were literally millions of self-described SF fans. Big budget films, such as *2001: A Space Odyssey*, *Close Encounters of the Third Kind*, and, of course, the *Star Wars* trilogy gave the former gutter genre a newfound chic. And a TV series that barely managed to survive for two-and-a-half seasons, *Star Trek*, attained cultural immortality after years of reruns, becoming the most valuable franchise in the history of Paramount Studios in the process.

The '80s and '90s have only continued this trend. Where once upon a time being a SF fan meant that you could discourse intelligently on the works of Robert A.

Heinlein or J.G. Ballard and the New Wave, today it might mean that you catch the occasional episode of *Sliders*. The SF software landscape encompasses everything from adventure games (Cyberdreams' *I Have No Mouth and I Must Scream*, based on the Harlan Ellison short story, and *Buried in Time: The Journeyman Project II* from Presto Studios and Sanctuary Woods) to down-and-dirty action (American Laser Games' lightgun shooter, *Space Pirates*). What follows is an attempt to look at some of the best games in the various categories that comprise SF computer games.

### Hardcore Heaven

It was only natural that this new breed of fan would gravitate to science fiction-based electronic games. In the early days of home computing, SF text adventures were extremely popular [see review of The Sci-Fi Collection elsewhere in this issue], with games such as *Suspended* (Infocom), *Oo-Topos* (Sentient), and *Star Trek: The Kobayashi Alter-*



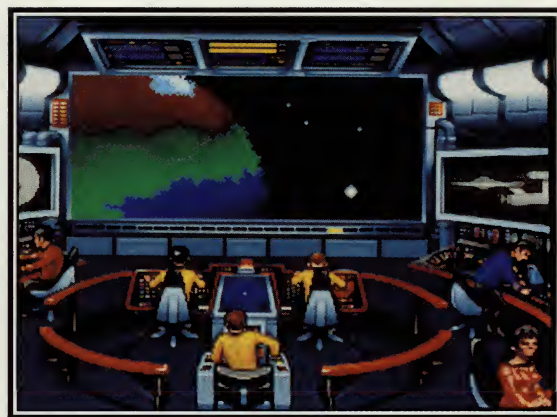


native (Simon & Schuster) offering gamers what amounted to interactive radio.

Today's SF fan, therefore, is not easily categorized. Obviously, there are still a few people out there who actually read science fiction (not just Star Trek novelizations, either), and who are familiar with its major authors, its history, and its classic works. These hardcore fans have little patience with psi powers, time travel gimmicks, and other dead horses of the genre. Still, the computer software market has quite a bit of wheat amidst the chaff even for these most demanding players. Here's a brief look at some contemporary products which should prove compelling even to fans of the late Isaac Asimov:

*Microsoft Space Simulator* (Microsoft) This is serious stuff; certainly not intended for us plug-and-play wussies. Seated behind the controls of a ship dubbed the *Galactic Explorer*, players fidget with fuel allotments, throttle thrusters, and actually attempt everything from launching to landing, with docking, orbiting, and an actual rendezvous in space along the way. The graphics are shit hot at 800x600 rez, but the audio is fairly nondescript, and there are an insufficient number of pre-fab missions. Nonetheless, this unique product offers unparalleled realism and a level of experience that all the *Wing Commanders* in the world cannot duplicate.

*Outpost* (Sierra On-Line) Yes, it's true that Sierra



rushed this game to market before it was finished, but what there is of *Outpost* is genuinely remarkable. Designed by Bruce Balfour (a former scientist at the Space Sciences Division of NASA's Ames Research Center), the program offers a level of player micromanagement on a grand scale: the Earth has been taken out by a cataclysm, and it's up to the player to take the remnants of humanity to another planet. From there, the user begins by creating a colony and may eventually establish several on the way to rebuilding civilized society. Omni's Keith Ferrell has called it "absolutely the best science fiction software ever published" while virtually every computer gaming magazine has praised it to the skies. And while its premature publication has created a number of problems for users (reports of bugs in the program have been common), it nonetheless remains among the finest works of science fiction ever produced in any medium.

Kurt Vonnegut's *Slaughterhouse-Five* (TWI) While this product is definitely of interest only to fans of Vonnegut or this particular novel, it shows some of the future potential of this format. The CD contains the complete text of the novel; an interview with Vonnegut; and archival film footage from ca.

## PC ACE BUYER'S GUIDE





WWII Dresden. There are also some silly gimmicks ("experience time travel by leaping randomly through the events of the novel—just as Billy Pilgrim does!"), and the very idea of reading a novel from a computer screen is, at best, a dubious proposition. Still, this is a unique concept, and stands alone right now as a new type of media.

*Blood Bowl* (Microleague) Future sports have always been a small but lively sub-genre of SF literature and gaming, and this faithful electronic translation of the Games Workshop boardgame classic in which mutant species from the far future stumble upon a late 20th Century football stadium

and attempt to reinvent it in their own, offbeat way.

*Day of the Tentacle* (LucasArts) The sequel to *Maniac Mansion*, this may not be Serious Science Fiction, but who says SF fans don't have a sense of humor? This parody of everything from 50s SF big monster movies to the foibles of "sci-fi" adventure games belongs in every gamer's library.

### Strategy in Space

Fans of strategy and tactics generally enjoy waging war in any environment, and deep space offers potential battlefield scenarios limited only by the imaginations of the developers. Some of the better recent entries in this genre include:

*Master of Orion* (Microprose) This has become the quintessential struggle for the galaxy in electronic form. Others have tried but none have blended economics, politics and military strategem quite as well as this product.

*Dune II* (Virgin) One of Westwood's first games produced for Virgin, this precursor to the recently released *Command & Conquer* takes the source material from Frank Herbert's novel and transforms it into a brilliant strategy contest. User friendly, with solid graphics and an intuitive interface, this is everything one could ask for in a SF-based strategy contest. (Note: the original *Dune*, which is also a very good product, was not developed by Westwood and is not a strategy game; it was, instead, produced by the famous French developers, Cryo.)

*Spaceward Ho!* (New World Computing) Struggle for control on the fringes of the galactic frontier in this excellent, network-playable

Macintosh contest, soon destined for the PC.

### Invasion Of The Space Creatures

Perhaps the heaviest hitters in the SF gaming pantheon are products driven by licenses with major film or TV franchises. Here are some of the more interesting entries in this category:

*Dark Forces* (LucasArts) *Star Wars* meets *Doom*. A spectacular first-person id-style shooter, this game has had *Star Wars* fans salivating since its release. There isn't much to know; just shoot everything that moves. Ah, beautiful science.

Fans should also, of course, be aware of the multitude of other *Star Wars*-based computer games, such as *X-Wing* and *Tie Fighter*, all of which are superbly programmed and deftly designed. The LucasArts name on a box is the closest thing to a guarantee of quality that exists in this industry.

*Star Trek: 25th Anniversary* (Interplay) This is an extremely traditional SF adventure that suffers from weak graphics but is an otherwise sound recreation of Kirk, Spock, Bones, and company. Trekkers will also want to check out *Star Trek: Judgment Rites*, also from Interplay.

*Star Trek: The Next Generation* (SpectrumHoloByte) The long-awaited, much-delayed computer version of the successful syndicated sequel to the original *Star Trek*. The game would've been much more impressive had it come out on time, but it remains a solid example of TV-inspired SF action-adventure.

*Star Trek: The Next Generation Interactive Manual* (Simon & Schuster)

This is like something



from a TNG fan's dream wish list: all the "data" from the eponymous book by Sternback & Okuda; in-character chitchat from TNG stars; and an amazing tour of the *Enterprise* comprising actual sets, props, and miniatures. There are also scores of FMV clips and a stunning database of the *Next Generation* universe. Sound like a keeper? Then make it so.

**Terrace** (Silver Ventures) Here's a real curiosity: a real world version of the game Picard and Data have been seen playing on episodes of *Star Trek: The Next Generation*. But the real surprise is the way Silver Ventures managed to fashion an original take on grid capture games (chess, checkers, etc.) that is so totally addictive. Your move, Data.

### Shootout at the SF Arcade

Ironically, however, the largest segment of the SF software market is designed for action-oriented crossover gamers who may have no particular interest in SF at all (beyond having enjoyed the first two *Alien* movies). Everything from *Space-Hulk* (Electronic Arts) to the latest *Doom*-alike is set in a corridor-style environment just bristling with a dozen varieties of space bug (what the old SF fans called "BEMs", or "Bug-Eyed Monsters").

Here's the pick of the twitch game litter:

**Space Hulk** (Electronic Arts) This brilliant action-strategy game, adapted from the non-electronic Games Workshop license, melds straight ahead *Doom*-style firepower with a brilliant exercise in combat tactics. Players move through a series of corridors on-board a spaceship infested with BEMs, but what gives the game its kick is the radar-style overview and the avail-

ability of four surrogate fighters, each of whom is tracked via their own video camera. Soldiers must be positioned to provide cover fire as the others move through the various labyrinth-style environments.

Fans of the original game will also want to check out *Space Hulk II*, also from Electronic Arts.

**Wing Commander III: Heart of the Tiger** (Origin) The ultimate cinematic SF thrill-ride is provided by Chris Roberts in this spectacular combination of effective FMV and outer space dogfights. Among the most expensive computer games ever made, and it shows, with animatronic Kilrathi and eye-popping graphics sure to keep gamers glued to the monitor.

**Cyberia** (Interplay) Drew Huffman and the wizards at Xatrix Entertainment have created a sublime SF shooter which has proven extremely popular with action fans. The player's craft is on a track (which means it isn't a free-flying experience), but the landscapes are stunning and the action fast and furious. Look for the sequel to arrive soon.

**Descent** (Interplay) Parallax and Interplay teamed up to create this high-speed twist on *Doom*-style games, with the first seven levels available in shareware format. Players pilot a fast-moving aircraft up, down, left and right through a series of tube-like tunnels and cavernous intersections. You may need Dramamine by the time you've made it through all 30 levels, three of which are hidden.

**Doom II** (id, GT Interactive) With all the talk about "*Doom*-style" games, it's only appropriate that we mention the progenitor of the genre. *Wolfenstein 3D*, *Doom*,

and *Doom II* comprise a trio of the most influential games of the decade. This is first-person SF action gaming at its finest.

**Under a Killing Moon** (Access) The most technically impressive of all the first-person action-adventures, Access literally spent years creating the latest in the Tex Murphy series. Free movement across a cinematically rendered, futuristic landscape is only one of the game's many virtues.

**Metaltech: EarthSiege** (Dynamix) Big robots piloted by people sitting inside the robot's heads has been a popular theme in gaming since the Japanese anime *Robotech* arrived in America over a decade ago. Chicago soon spawned a *Battletech* center, wrapped around the license from FASA, and software publishers have been pumping out such games ever since. Dynamix' *Metaltech* is an original series, with *EarthSiege* and *Battledrome* the first two entries. So get inside that robot head and start shooting!

There you have it, *Aces*; a look at some of the best SF software around. We weren't able to mention each and every worthy game, of course, but anyone looking to build a first-class SF library should begin by checking out these entries.

Have fun, and keep watching the skies; there's more to come.



# The Toy Box

## The Top Peripherals for PC Gaming under \$200

by Bernard Dy

Christmas is right around the corner, and you might want to add a little spice to your hardware to match the flash of that new software. The good news is there's a lot of great toys you can add to your system, from fast CD-ROM drives and video cards, to fancy input devices like joysticks. The bad news is that



some of the finest toys are really expensive.

Fortunately, \$200 still has some buying power in the gaming peripherals market. We've selected a sampling of products from a wide selection of prices and types, so there will be a little something for everyone.

For those players who have yet to invest in one, sound cards can dramatically improve your enjoyment of games. Whether it's evocative background music, smash-mouth dialog, or bone-crunching sound effects,

adding the audio dimension to this already visual genre is what really gives computer gaming an edge.

There are literally dozens of qualified products to choose from. The Creative Labs Sound Blaster 32 and the Turtle Beach Tropez (\$199 street) are two of the best in this price range. The Tropez is



(Left) NuReality Vivid 3D PRO

(Right) Turtle Beach Tropez

a beautiful piece of work. It has 2MB of wavetable ROM samples, excellent digital sound quality, and Sound Blaster compatibility.

Strictly judging a product by the sound quality wasn't enough in this case. Too many players have suffered through sound card incompatibilities, even with supposedly "Sound Blaster compatible" hardware. Demanding games written to utilize full SB functionality can generate problems on competing cards, which only need to be 80% compatible to qualify for the likeness rating. The

Sound Blaster 32 gives you the industry standard, 16-bit sound, wavetable capability with 1MB of ROM samples, and some nice software. It's a solid and reasonably hassle-free pick. Still, don't discount other cards; with increasing support, Windows 95 could be their big equalizer.

For those of you that already have a 16-bit sound card, but lack wavetable capability, some add-on daughter cards are designed to work in conjunction with your current peripheral. A good example is the Advanced Gravis Ultrasound ACE (\$80 street). The Creative Labs Wave Blaster (\$150 street) is another, but it is designed for true Sound Blaster cards.

Sound cards are only half of the audio equation. As any audiophile will tell you, speakers should be your biggest investment. Any sound card will sound its best on quality speakers and crippled on poor ones. The best computer speaker systems cost upwards of \$250-400 (street), but there are still some great products in our price range. All of these units are magnetically shielded for multimedia use, and small enough to be used on desktops. Look at the Jazz 688-AV and NuReality Vivid 3D Speakers. Both are priced at \$199 (MSRP), so you should be able to find them for less, and they sound great. The Vivid 3D incorpo-



rates the same surround sound technology as the NuReality sound enhancement units (see below). Though not as common as some other brands, I was impressed with Micro Multimedia's PC Amp TC1490SP. For a two-speaker system, it has strong bass, and strong presence (\$199 street). There are dozens more that we don't have space to mention, but we'd be remiss if we didn't give a nod to the Altec Lansing offerings. They're all superb contenders in their price ranges. Look to the ACS 53 (\$170 street) for a nice three-piece system. Personal preference has a very heavy hand in selecting what's right for you, so we recommend a visit to the local outlet for a listen.

Another sound enhance-



ment device is the NuReality Vivid 3D Pro (\$149 MSRP/\$110 street). This inline enhancement creates surround sound effects from a two-speaker system. The 3D Pro's easy installation and excellent results, thanks to an amplifier built into the unit, were impressive. For certain types of music and voice, the effects were minimal, but most music and sound effects gain additional presence. It transformed Interactive Magic's Apache into an "in your face" experience. This makes a nice gift for those

(Top) CH Products  
Flight Stick PRO  
(Right) CH Products  
Pro Pedals

NuReality Vivid 3D  
PRO Speakers

already owning nice speakers. The 3D Pro's little brothers, the Vivid 3D and Vivid 3D Plus (\$70 street) lack the amplification, but can offer similar effects at lower prices.

We've got your system blasting DOOM loud enough to make your neighbors wonder what WWII movie you're watching. Now we have to look at the next big factor: visual output. If you bought an entry-level PC, you've probably discovered that your video card is not top-of-the-line when it comes to running US Navy Fighters or NASCAR at full detail. Bad news: inside of \$200, there's not much you can do to get those particularly demanding products running smoothly. Good news: You don't have to buy a 133Mhz Pentium. Upgrading the video card is one way you can get it to run well with moderate detail. The pick in this category is the Diamond Stealth 64 DRAM 2MB. It weighs in at street prices just under \$200, and it's deft at handling both DOS and Windows tasks. The caveat here is that Diamond tends to make gear on the cutting edge, which means you may have to suffer tech support and compatibility problems on the bleeding edge. Sim buffs, in particular, may also want to wait until more 3D video cards are available before committing to this category.

You're hopping now, with decent looks and sound, but something's still not right. Driving a simulator just seems hopeless on a keyboard. You need MORE POWER!

If you want excellent joysticks designed to take a beating and keep on flying, you want to take a look at the CH Products family. The Flightstick Pro (\$89.95 MSRP/\$55 street) includes a



throttle wheel, trigger, three secondary buttons, and a "coolie hat" control. Sticking with CH, you'll want to consider the Pro Pedals (\$139.95 MSRP/\$85 street) or CH Pedals (\$89 MSRP) which can be used as both driving pedals and flight rudder pedals. CH had planned a set of F-16 joysticks and throttles, but they weren't available at press time. Keep an eye out for them, as they will be in this price range (expected \$139 MSRP for the high-end models).

The arch competitor to the CH units are the Thrustmaster F-16 FLCs (\$199.95 MSRP), F-16 TQS (\$199.95 MSRP), and Rudder Pedals (also see the Armory, elsewhere in this issue). You will do well with either set of toys, but users are divided on them. Many appreciate the durability of the CH offerings, but others prefer the realistic appearance and ergonomics of the Thrustmaster devices, which look like they were ripped right out of an F-16. The Thrustmaster gear is generally the preferred choice for flight sim die-hards.



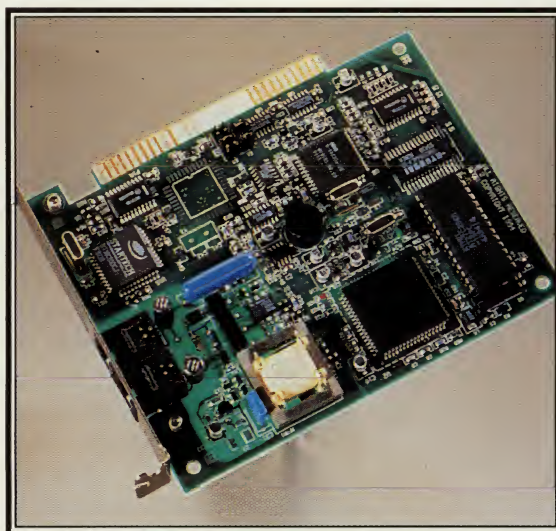
If you plan to acquire a complete set of complementing joystick, throttle, and pedals, you must select the components from one manufacturer because some of these items are not compatible with competing units. Finally, take a look at the Suncom F-15 Eagle stick (\$129 street). A newcomer in the fancy joystick category, it is programmable on the fly and has a realistic look and feel.

One trend over the last two years of computing has been a major exodus to the use of CD-ROM media. More developers will be supporting the 4X CD-ROM drives. Most of the available drives will work fine, but my pick would be the Toshiba 3501. This drive is a reliable, strong performer with low CPU utilization demands. We are cheating a little, as street prices for this unit are still above the limit set for this article, but it was the most affordable of the better SCSI models. It may soon be supplanted by the even faster 4.4X Toshiba 3601, however, these drives should drop in price with the 6X drives pushing them. If you prefer an IDE CD-ROM, quad speeds are well within \$200. Prices will be a little higher if you need to buy an external unit.

A modem is the last item on our list of stocking stuffers. The next gaming dimension can be reached by replacing the computer AI with a human opponent. A modem will do that by connecting you to online services. Online arenas like America OnLine or the Internet can provide you access to tech support, games, hints and utilities, and communication with people around the globe. There are a plethora of 28.8 modems in the price range, but the best and most reputable are the US Robotics 28.8 Sportster



(Top) Thrustmaster F-16 FLCS  
(Above) Thrustmaster F-16 TQS  
(Below) Practical Peripherals PM288HC II V.34  
(Right) Spotster 28.8 PC Fax



and Practical Peripherals Practical Class 28.8 internal models. Successful establishment of the highest speed connections was not always consistent, but performance at optimal connection for both modems was very good given the prices.

### Contact numbers

#### Joysticks

Thrustmaster 503/639-3200  
CH Products 619/598-2518  
Suncom Technologies  
800/444-3699

#### Sound Cards

Advanced Gravis  
800/663-8558  
Creative Labs 800/998-5227  
Turtle Beach 800/645-5640

Speakers/sound accessories  
Altec Lansing 800/258-3288  
Jazz 818/336-2689  
Micro Multimedia (PC Amp TC1490SP) 410/998-9617  
NuReality 714/442-1080

#### CD-ROM drives

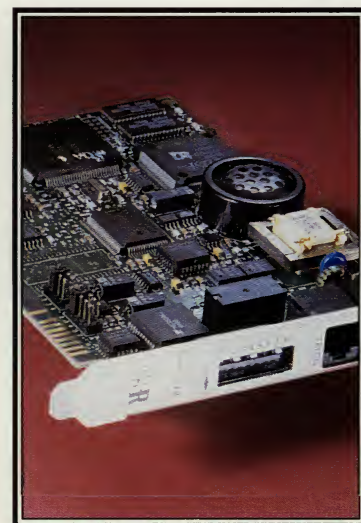
Toshiba 714/583-3936

#### Video card

Diamond 800/4MULTIMEDIA

#### Modem

US Robotics 800/DIAL-USR  
Practical Peripherals  
800/934-2937





# ALLIED GENERAL

## BIGGER. BETTER. READY TO ROLL!

WINDOWS® 95  
CD-ROM for IBM  
& Compatibles

Power Mac  
CD-ROM



For  
Game Rating  
info, call  
1-800-771-3772



If you were blown away by **PANZER GENERAL™**, you'll be blown to bits by **ALLIED GENERAL™**!

**P**ANZER GENERAL took the gaming world by storm. It established an entirely new game category, prompting *Computer Gaming World* to call it, "...such fun that even non-wargamers are likely to find themselves hooked."



Now, prepare to become an **ALLIED GENERAL**. Volume II in SSI's premier **5-Star Series™** has you in its sights — and this time the battlefield is the state-of-the-art Windows® 95 environment!

Like its award-winning predecessor, success depends on your effectiveness as a leader. Play three campaign games as an American, British or Russian General against the German army. Or choose over 35 scenarios that let you play as either the Allied or Axis side. Engage in a little conjecture: several what-if scenarios include Churchill's never-realized invasion of Norway — *Operation Jupiter*. With so many choices, your abilities will be tested as never before!

Watch your forces grow with each victory. Use new troop types such as Finnish ski troops. Engage in E-mail gaming with streamlined file transfer and full VCR playback of your remote opponent's turn. All of this and more await your challenge. Welcome to the next generation of strategy gaming!

**RUNS ON  
WINDOWS® 95  
AND  
WINDOWS® 3.1**

**ALLIED GENERAL.**  
**The excellence continues.**

To Order: call 1-800-601-PLAY with Visa/MC  
(North America only).



A MINDSCAPE® COMPANY

ALLIED GENERAL and PANZER GENERAL are trademarks of Strategic Simulations, Inc. ©1995 Strategic Simulations, Inc. All rights reserved. Windows is a registered trademark of Microsoft Corp.



IBM SVGA DISPLAYS





# Flights of 13Mike

## The Virtual Checkride

by Mike Thompson

*Flights of 13Mike* is an excellent virtual flight instructional trilogy written by two professors at Embry-Riddle Aeronautical University, Fred J. Calfior and Douglas W. Miller. The three books utilize a building block approach to teach the computer pilot about simulated aviation, and were written primarily for use with Microsoft Flight Simulator versions four and up. Each chapter in the first book, *VFR Flights of 13Mike*, builds on the previous chapter's information. The second book, *IFR Flights of 13Mike*, introduces instrument flight, providing readers with a virtual instrument ticket.

The third book, *Airienteering with 13Mike*, puts reader's aviation knowledge to the test in a series of flight assignments to an unknown destination airport. To arrive at the final point, the pilot must correctly answer several questions about aviation history or aviation-related trivia, then follow the directions associated with that answer to the next airway or fix. Ultimately, you will be given a landing clearance, but only after you answer all the questions correctly. Incorrect answers will backtrack the unwary pilot to the incorrectly answered query for another try. This volume is interspersed with interesting tidbits of information; virtually all of which are aviation related.

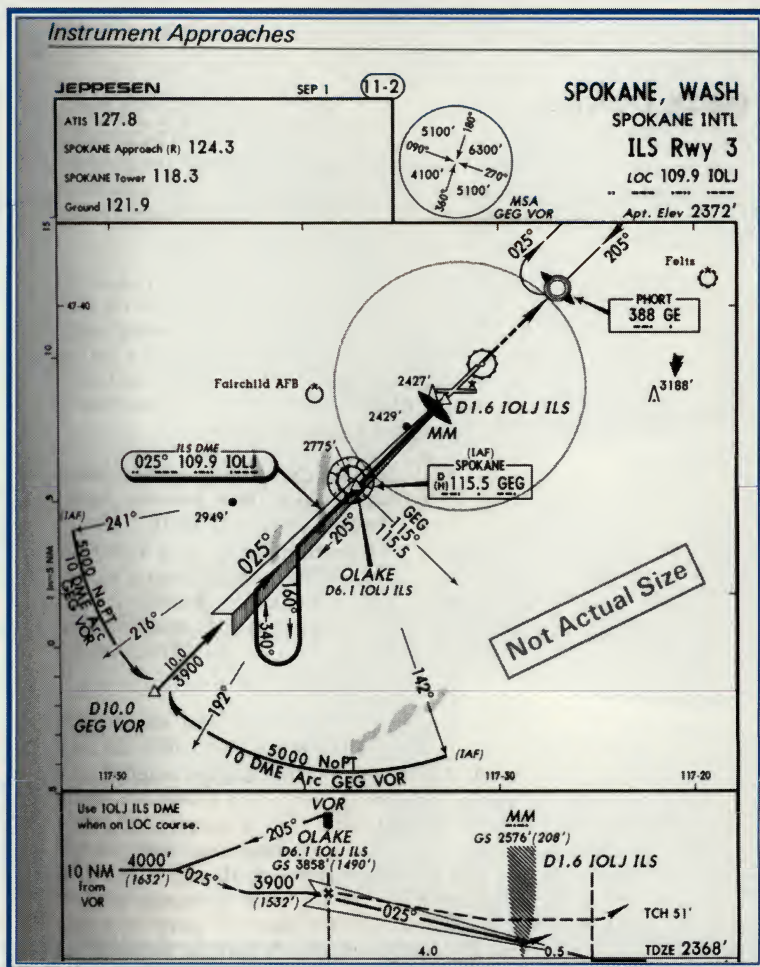
Be forewarned: disaster awaits the pilot who doesn't know, or learn, the answers! Today's Hint: Don't try that

split-S they suggest from low altitude. They already know you won't make it!

As with all endeavors, it's best to start with the basics, and that is what the authors do. However, they do presuppose that the armchair pilot has a working knowledge of *Microsoft Flight Simulator* and make no bones about providing tutorials to teach the basics of the program. Readers need to know how to select an aircraft, tune the radios, and raise and lower the landing gear and flaps before meeting the instructors

out on the ramp. The authors' aim is to present flying with as much realism as possible without physically sitting on the virtual flight deck. After working through each phase of the flights, each maneuver is broken down into its component parts and the techniques used to achieve the goals are explained. Every chapter starts with a briefing of the flight plan as well as the goals and objectives of the lesson. As with instructional flights in an actual aircraft, the instructors provide grading opportunities several times

(Below right)  
Example of a  
Jeppesen approach





during a flight. The difference here is that the reader must evaluate his or her performance by comparing answers to the correct responses found in the back of the book. The earlier flights are short — about 30 minutes—with the later flights lasting from 40 to 70 minutes.

A typical flight is the one from Santa Monica to Torrance, California via the Los Angeles TCA Corridor, which is expected to take about 30 minutes. Good communication procedures are emphasized during this flight and some new concepts are introduced such as the designated run-up area near the end of the runway and a right downwind departure. All the flights in VFR skills, especially pattern work, are discussed and diagrammed and many of the questions focus on the position and heading of the aircraft. IFR's emphasis moves onto orientation, navigation, and control of the aircraft solely by reference to the instruments.

Although *Microsoft Flight Simulator* does not offer much in the way of radio communications or the ability to communicate with such facilities as the FAA Flight Service Stations, the authors include text which authentically reproduces the interaction of a pilot with both these services. Weather briefings are included for the flights, along with settings for *Microsoft Flight Simulator* so users may match the instructors' flight briefings. The inclusion of the visibility limiting "haze" feature in *Microsoft Flight Simulator 5.1* adds additional realism to this facet of the adventures. Relevant portions of sectional charts, and the keys, are reproduced in the back of each book. Since all of the flights take place in the default scenery areas of

*Microsoft Flight Simulator*, there is no need to rush out to purchase additional scenery areas to fully enjoy *Flights of 13Mike*.

These features, coupled with the chatty conversational style of the "dual instruction" which accompanies each flight, make it very easy to become immersed in the lessons. The training and experience of the authors is obvious from the first. For example, one real world necessity missing from most flight simulator programs is a comprehensive checklist. Professors Calfior and Miller include the necessary parts of the checklist for each stage of each flight, along with a point value for each step. As in all of aviation, adherence to the checklist and procedures is rewarded; deviations are penalized. Fortunately for simulator pilots even the worst results can be quickly erased by using the exit command. No parachute required!

**Flights of 13Mike: A Microsoft Flight Simulator Companion Book One-Level A**  
ISBN 0-9639052-2-8

**IFR Flights of 13Mike: A Microsoft Flight Simulator Action Book Two-Level B**  
ISBN 0-9639052-1-X

**Airienteering with 13Mike: A Microsoft Flight Simulator Action Book Three-Level A**  
ISBN 0-9639052-3-6

\$19.95 each from:  
Camil Publishing  
2224 Katahn  
Prescott, AZ 86301

Now let's offer a quick overview from the PC Ace staff of game-related literature that will make great holiday stocking stuffers for any of our loyal readers (leave this page laying casually open on

the coffee table, they'll get the idea).

If these books are not available through a local bookstore, contact the publishers directly at the following numbers:

Prima Publishing  
(through Random House)  
(800) 733-3000

Brady Books (through Macmillan) (800) 428-5331

Unfortunately, as of press time, the PC Ace review staff had not been able to thoroughly examine all of the titles listed below. We are therefore relying heavily on information from the publishers to make this information available as a service to our readers. Caveat emptor and all that.



**Prima Fall Titles**

**Basham, Tom.**  
**Werewolf/Comanche 2: The Official Strategy Guide.**

This helicopter flight simulation title guides players through the intricacies of flying a Russian Werewolf or American RAH-66 Comanche in a new series of exciting and challenging missions. The book is written by PC Ace's sim guru, Tom "KC" Basham, whose rep speaks for itself (which is just as well, since it would be unseemly for us to blow his horn). 192 pages. \$19.95.

**Dargahi, Nick. Microsoft Flight Simulator 5.1: The Official**



### Strategy Guide.

With more than 100 new airports, virtual pilots will be guided through challenging weather effects and death-defying crash landings until every scenario is successfully completed with advanced navigational techniques. Covers *Windows95* installation (plus points there, Nick!). 580 pages. \$19.95.

#### **DeMaria, Rusel. TIE Fighter CD-ROM Edition: The Official Strategy Guide.**

This sequel to LucasArts' wildly successful *X-WING* is based on the classic *Star Wars* series, with improved effects and enhanced storyline. DeMaria is a real veteran of the strategy guide wars and his work always deserves a look. \$19.95.

#### **Dille, Ed. This Means War!: The Official Strategy Guide.**

It is the 21st Century in post-apocalyptic world where the world has been destroyed by the computer game *Snark Hunter*. The Free World Alliance has been formed to take control of what is left and the player must help FWAs leader, Noah Adams, rebuild the world by destroying villainous tyrants and other nasties who have risen from the chaos. Dille Strikes again. \$19.95.

#### **Dille, Ed. Silent Hunter: The Official Strategy Guide.**

This World War II submarine simulation game contains state-of-the-art graphics and one simple mission for gamers: to sink as much tonnage of enemy ships as possible. Author Dille has the naval cred to cover this material like white on rice. 244 pages. \$19.95.

#### **Poulter, Keith. Empire 2: The Official Strategy Guide.**

This title guides players

through recreations of real and fantastical battles from different time periods. For instance, Roman legions can battle it out using short swords against flying saucers or gamers can relive the Civil War. A unique approach that should benefit from a strategy book such as this. 244 pages. \$19.95.

#### **Rymaszewski, Michael. Caesar II: The Official Strategy Guide.**

The player is transported back in time to the Roman Empire where the goal is to win battles over distant lands that will expand the empire and allow the player to reach the ultimate throne of Caesar. The goals of many of the Roman emperors "debauchery, blood and circuses" will probably get short shrift, as usual. Sigh. 200 pages. \$19.95

### Brady Fall Titles

#### **Ceccola, Russ. TekWar: The Official Game Guide.**

Tek, an hallucinogenic drug, has taken over the city and only you can save it from destruction. Here are the tips and secrets gamers need to destroy their opponents and move on to higher levels. Includes descriptions and behind the scenes information from William Shatner. Russ is a veteran game writer with a special interest in horror and sci-fi media projects. He also has gained a considerable reputation for his ability to score cool press goodies, so if you have him autograph this book, see if he'll throw in a Spectrum-HoloByte *Star Trek: TNG* pin. 300 pages. \$19.99

#### **Waring, Robert. Terminal Velocity Official Strategy Guide.**

The earth is in jeopardy and must be defended (now

that's original!). Players have the power to save the planet, but be thankful it's only a simulation, okay? This volume contains tips on how to locate power-ups, secret tunnels, planets (where did I leave that planet?) and other heavenly bodies. Also included are mission by mission strategies.



324 pages. \$19.99

#### **Wolf, Scott. Top Gun Official Strategy Guide.**

Feel the rush of aerial dog fighting when you relive the drama of one of the most popular action movies of all time. This guide to the game provides all the strategies, behind-the-scenes information on how the game was created as well as interviews with several of the key characters by veteran game writer (and wolfologist) Scott Wolf. 300 pages. \$19.99.

#### **Terra Nova Official Strategy Guide.**

Hardcore fans, science fiction enthusiasts, combat gamers and others of this ilk will score big on this highly anticipated game with the help of this guide's hints and tips on attacking, defensive moves, spying missions and more! The book covers all missions, weapons, spy drones and more. The author's name was unavailable at press time. 300 pages. \$19.99.



20,000 MEN LAY STREWN ON THE BATTLEFIELD...  
ENEMY GUNS RIPPING INTO YOUR FLANK...  
CAVALRY ADVANCING TOWARDS YOUR CAPITAL...

DECIDING THE FATE OF A NATION WAS NEVER GOING TO BE EASY

# The Civil War



**BUILD-**  
RECRUIT ARMIES, BUILD  
FLEETS, SET UP  
BLOCKADES, IMPROVE  
RAILWAYS AND CONSTRUCT  
FORTIFICATIONS.



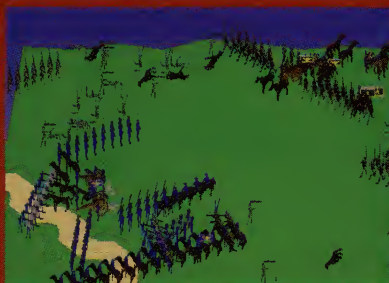
**DATABASE-**  
ACCESS TO ALL THE  
INFORMATION YOU WILL  
EVER NEED, GENERALS,  
WEAPONS AND WHAT  
REALLY HAPPENED.



**COMMAND-**  
APPOINT, PROMOTE AND  
SACK HISTORICAL  
GENERALS. DECIDE ARMY  
STRENGTHS AND  
FORMATIONS, PUT YOUR  
STRATEGY INTO ACTION.



**MANEUVER-**  
USE THE DETAILED  
CAMPAIGN MAP OF THE USA  
TO MOVE YOUR ARMIES BY  
LAND, SEA, RAIL AND RIVER.



**FIGHT-**  
MOVE AND FIGHT  
INDIVIDUAL ARTILLERY,  
CAVALRY AND INFANTRY  
UNITS ON A 3D TEXTURE  
MAPPED COLOUR SHADED  
BATTLEFIELDS.



THE TEAM THAT BROUGHT YOU THE AWARD WINNING FIELDS OF  
GLORY PUSHES THE ENVELOPE OF STRATEGY AND SIMULATION  
TECHNOLOGY ONCE MORE WITH *THE CIVIL WAR*.

*THE CIVIL WAR* ALLOWS YOU TO PLAN AND FIGHT EVERY MAJOR  
BATTLE AND CAMPAIGN OF THE WAR. LEAD NORTH OR SOUTH IN ONE  
OR TWO PLAYER MODES OVER SERIAL LINK, MODEM OR NETWORK;  
THROUGH FOUR "BLOODY" YEARS THAT SHAPED THE WORLD'S MOST  
POWERFUL NATION.

EVERYTHING IS IN REAL TIME, THE CLOCK IS RUNNING...

**CIVIL WAR, THE DEFINITIVE GAME OF STRATEGY, LEADERSHIP  
AND TERRITORIAL ADVANTAGE.**

PC CD-ROM

**PAGGER**  
INTERACTIVE TECHNOLOGIES LIMITED

empire interactive • 13220 Wisteria Drive • Bay N-2 • Germantown, MD 20874 • Voice: (301) 916 9302 • Fax: (301) 916 9437

**empire**<sup>®</sup>  
INTERACTIVE



The Complete Saga Of Derek Smart's Six Year  
Long Odyssey To Take Gaming To The Next Level

# BATTLECRUISER 3000AD:

## What Makes Derek Smart?

by Ed Dille



Six years can be a very long time, even by galactic standards. From a purely Terran perspective, consider the fact that World War II was decided in that same temporal span. The former Soviet Union was dissolved completely in half that time, and Desert Storm, the greatest

mobilization of manpower in the latter half of the 20th century, climaxed in 100 hours.

Yet, six years is exactly how long *Battlecruiser 3000 AD* has been in development. It has also absorbed five publishers and countless iterations in that time as well. With most games, that would have thrown up warning flags across the board, dooming the project to software oblivion. Yet, somehow, BC3K never succumbed. It was surely in Intensive Care for months at a time, and on more than one occasion the entire industry decided that the legendary project had flatlined. But, like some virtual Lazarus, it would not be buried. There were many

wakes, but there was never a funeral, and it is absolutely crucial that the reader understand how this project survived in spite of everything that was arrayed against it.

That reason is Derek Smart, the stubborn, perfectionist, naive, micromanaging genius who created *Battlecruiser 3000*. It is said that all of life is compromise, but the secret of Smart's ultimate success was his very failure to give an inch. From day one, he maintained a relentlessly clear vision of the product he set out to produce before the Wing Commander dynasty was a glint in Chris Roberts' eye.

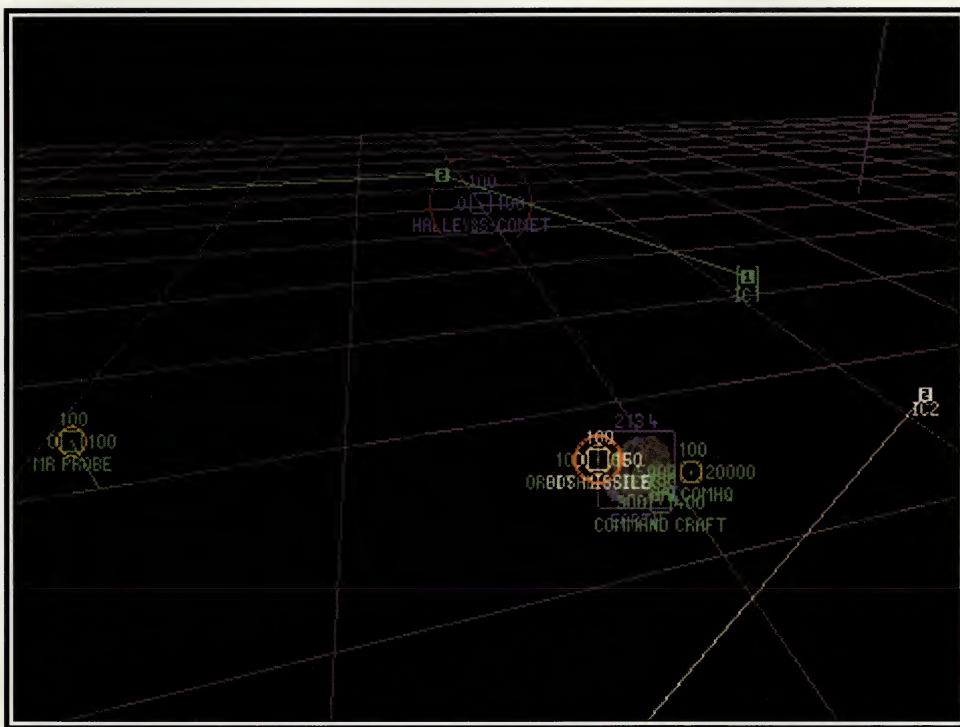
Smart immediately realized that nothing of the scope he intended had ever been attempted (and, in fact, has yet to be tackled in the intervening half-dozen years). He therefore determined that the existing palette of developer tools were inadequate for the task at hand. Consequently, he coded his own proprietary toolbox from the ground up and began development in earnest.

The first suitor to come calling was Three-Sixty, already in the early stages of the decline which eventually landed it in bankruptcy. As this first relationship collapsed, Smart and early co-developers Mission Studios initiated a rebound romance to keep the project rolling.

Unfortunately, the new partner soon began to initiate







a discomforting sense of dejavu in the now wary Smart. Sure enough, the second suitor was also in the throes of financial woes and, while not as bad off as Three-Sixty, partner number two wound up offering to sell its contract with Smart to Interplay.

Then all seemed quiet for a time, "too quiet" as they say in the old cavalry movies. Interplay requested changes in the project in the hope of getting the game more speedily out the door. Smart wouldn't play ball and yet another relationship floundered just as a deal with partner number four was about to be founded.

Time and again, publishers were entranced by Smart's incredible design and ignored the project's past history, like all those guys who kept marrying Elizabeth Taylor—there might be problems, but you *were* getting Liz Taylor. This time it was Capstone/Intracorp (purchaser of Three Sixty ironically enough) which stepped forward to pick up the now fractured Mission Studios/Interplay deal.

## PC ACE FEATURE

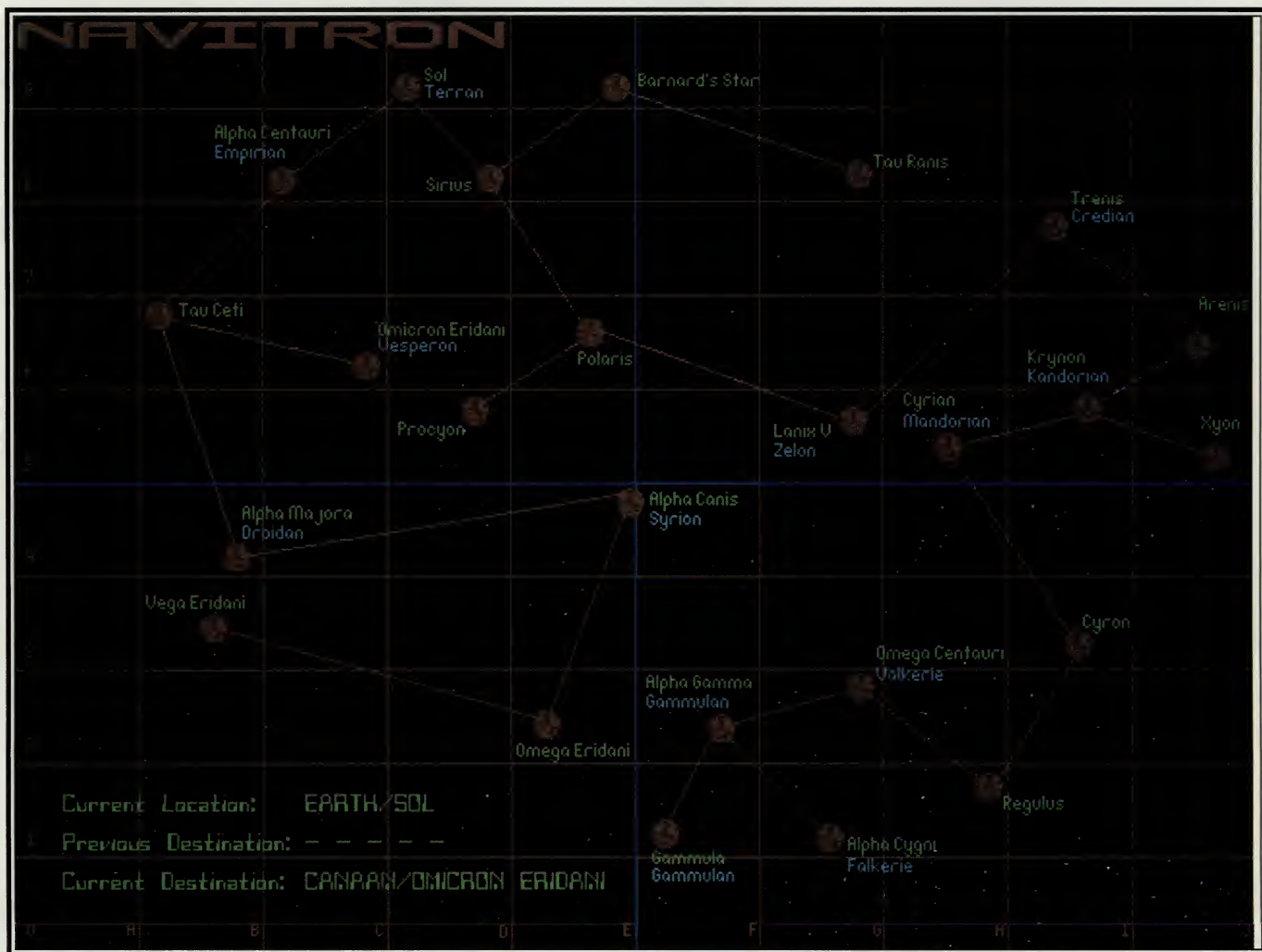
Just when everything seemed rosy, however, C/I backed out on a signed contract, resulting in a blazing battery of rather unflatteringly and litigious memorandums between the legal counsels of the two companies. Amidst this chaos, Smart remained true to his vision and continued slogging through code, unflinching in his determination to finish the project in the manner he intended, regardless of the cost, professionally or personally. By this point, Smart (who surrendered his

position as a highly respected and well compensated consultant to IBM to undertake this project) had exhausted all of his personal savings, several lines of credit, lost his home, and was forced into consistently smaller apartments just trying to survive long enough to realize his dream.

Enter Take 2 Interactive, sparing Smart the final indignity of being forced to code on his laptop as a homeless person, dropping quarters in a pay phone somewhere in South Miami to accomplish uploads of his data. This may sound ludicrous to some of you, but it definitely would not to anyone who has ever met Dr. Derek Smart, a man of vision, passion, integrity and uncompromising standards (who, like all driven men, is not without his eccentricities as well). What type of project captivates the imagination of a man like Smart so completely that he is willing to risk everything to achieve it? Almost always, and that is the case here, it involves doing something that no one has ever done before. Step forward now into the universe of *Battlecruiser 3000 AD* to find out what makes this product unique in the annals of gaming.







## Backstory, Inc.

It is now 3000AD and with the galaxy bracing itself for a war of galactic proportions, GALCOM is committed to building a large and powerful force. Most of its new commanders are either seasoned combat vets from the member nations, or green commanders fresh out of the academy, itching for a fight.

As you embark upon your mission, you will encounter alien nations, some friendly and some blatantly hostile. You will also have pirates, smugglers, marauders, and insurgents to deal with. Most of your orders will center around maintaining law and order within your patrol zone, exploration, escort, strike and search-and-rescue missions. You will be expected to maintain diplomatic courtesy to Terran allies and be ready to protect the assets of GALCOM members.

*"You are a Galactic Command operative, trust no one."*

-Excerpt from the GALCOM Operating Manual

## LEAP OF FAITH

The first leap of faith required by players is that the game does not center around them. The *BC3000AD* universe is a living, breathing, dynamic ecosystem in which the player interacts with equal weight as all the other inhabitants. Don't misunderstand this. One's action or inaction can have far reaching circumstances, but this universe doesn't sit around waiting for players to make a decision. In fact, voyeuristic players can opt to sit back and let the game play itself out indefinitely while they take the role of galactic historian, tracking and recording the endless ebb and flow of power between multiple races. What's more, that same play-





er could be running 20, or 100, or 10,000 such universes on multiple installations and none of them would mirror one another. Why? Because the entire game is run on a neural net and is based on goal oriented processing. Don't feel bad if those terms are unfamiliar, no one has ever done this before!

A neural net can be thought of as a programming web that controls multiple game engines. The *BC3000AD* net controls 10 such distinct engines. Each time a new campaign is started, the program initializes the entire Universe: 75 planets, 25 star bases, 48 star stations, 144 moons, 3,419 stellar objects including asteroids, meteorites, comets, flux fields, jump points, worm holes, black holes, binary stars, all the galaxies, and so forth. The whole thing is astrophysically correct. All the orbits and trajectories are correct. If the player does something to influence the trajectory of a meteorite, for example, the program will calculate a completely accurate new trajectory based on the force, mass, and angle of attack applied to the object. If that new trajectory places the meteor on a collision course with another object, it will

eventually hit that object unless the player does something else to correct it.

The neural net has various channels, called threads, that it uses to monitor and control game events simultaneously. Three threads are used to monitor all the friendly (or at least non-hostile) alien races, and three more for the hostile alien races. There are 14 alien races in all. One thread is used exclusively to monitor and evaluate the player's actions. Another thread is dedicated exclusively to updating the physical model just described based on actions occurring anywhere in the game universe, with or without player involvement. Finally, there are two threads that the net uses for its own strategic thinking and decision making. When the player enters a region, this thread takes priority over the other threads for a period of time, but all of the threads work together concurrently to shape the flow of events in the game.

Goal Oriented Processing is the logic utilized to aid the net in managing decision making. At the beginning of any campaign, the strategic goals and political alliance structure of all 14 alien races and the Terrans are pre-set, but they are very broad in

scope. The strategic objectives of GALCOM, for example, are as follows:

- Keep Hostiles out of Terran territory
- Protect Terran holdings abroad
- Maintain freedom of navigation throughout all sectors of space
- Build the GALCOM Alliance to include as many alien civilizations as possible
- Assist other member races of the GALCOM Alliance as needed
- Locate weapons technology

Please note that "complete and utter conquest of the universe," the most common of all grand strategic objectives for epic space operas, is noticeably absent from the list. Further, despite the fact that these goals are far reaching and open to interpretation by the player and the neural net alike, they do define a fairly clear ideology. It doesn't take a political science major to see that the objectives of GALCOM roughly parallel those the United States currently pursue within the confines of a much smaller ecosystem.

Now, let's take a peek at

## PC ACE FEATURE





the Gammulans, by no means the only potential enemy in the game but definitely the baddest of the bunch. They unilaterally oppose GALCOM's attempts to position itself as a force of universal law and order, but are not interested in controlling the entire galaxy or practicing genocide on other races (it's virtually impossible anyway, no matter how many resources one devotes to the task). Rather, the Gammulans wish to exert their control over key strategic parts of the galaxy by limiting access to them. In other words, they focus on the navigational chokepoints that all races must pass through to reach a given quadrant or system. To put this in perspective, simply think of the jump points, flux fields, worm holes and other critical navigational paths as stellar counterparts of the Panama Canal and one begins to develop an appreciation for the Gammulan grand strategy: Intergalactic Toll Collectors.

All the other races have agendas of their own as well,

## PC ACE FEATURE

many of which have to do with relations between one another and have nothing to do with the player unless he or she attempts to intervene in some way. For example, the Credians and Kandorians are in an almost perpetual state of war and will continue to pursue that conflict with one another regardless of aggression on a second front. If, however, one intervenes on the side of one of the combatants, then the recipient of that aid might be more predisposed toward their new allies in the future.

Within the scope of each race's strategic objectives are smaller sets of tactical objectives, each group of which is managed by one or more AI-driven NPCs. One of the Gammulan commanders, for example, has orders to weaken all alien races in support of the grand strategy. How he opts to accomplish this is entirely up to him. In short: once events are set in motion, the sequences, decisions and the order in which things get done are completely free form. Forget all the claims

about infinite replay value espoused by other game companies, this is the genuine article.

It was mentioned earlier that genocide was virtually impossible to accomplish. The reason behind this has nothing to do with ethical considerations, it is simply a matter of evolution, growth and adaptation over time, all of which are incorporated into the neural net model. Let's say a player conducts an assault on a planet to eliminate its defenses and some of its buildings. These structures will eventually get rebuilt based on the tech level of the planet and the resources available for allocation to that job. What is most important to understand, however, is that the previous base will not be duplicated; the program has already learned that those defenses were insufficient to stave off the attack, so the neural net will build both more and more capable SAM and SAL sites to be more prepared should the player decide to return.

The universe learns from players and adapts.

By now, it should be readily apparent that there are plenty of ways to lose the game, but there really is no way to win. GALCOM's mission and – the player's responsibility set – never ends.

### UNDER THE HOOD

Now let's take a look under the hood of the Battlecruiser itself. It is a fully designed, integrated command and control delivery platform. Smart has logically placed power distribution grids, support and weapons systems in such a fashion that damage sustained in combat is resolved in intricate detail based on the location and power of the hit, not arbitrary random assessments. Fur-



# Join The Company of

# ACES!

Join the **PC ACES** every month  
for the world's best coverage  
of flight simulations,  
wargames and science fiction.  
News, previews and reviews by  
the computer gaming  
industry's hottest writers!  
Each issue also includes the  
latest on hardware,  
accessories and everything  
you need to survive  
on the  
**SILICON BATTLEFIELD.**

Subscribe **NOW** to ensure  
receipt of each and every one  
of these collectible issues of  
**PC ACE Magazine.**

Call **NOW 1-805-565-4782**  
And Report For Duty!

**Please Send My Subscription To:**

Name .....

Address .....

City .....

State .....

Zip .....

Country .....

☐ Payment Enclosed  
(Check or MC/Visa, US Funds)

☐ Bill Me Later

6 Monthly Issues.....\$19.95 12 Monthly Issues.....\$35.95

In Canada 6 Issues \$29.95, 12 Issues \$39.95

Other Foreign Countries 6 Issues \$29.95, 12 Issues \$44.95

Payment in US Funds or MC/Visa Only Please.





ther, the crew members actually move through the decks they would logically be on for a particular task, going to their quarters to sleep, to the galley to eat, and so forth. So, if a crewman is wandering down a corridor when it takes a hit, they will be injured or killed.

If the crew were of the generic sort, that level of damage resolution would be unnecessary, but they are in fact individual personalities of great importance. Each has AI attributes which govern the skill with which they perform their duties, from deployment of a group of interceptors by the Tactical Officer to management of repairs and the power grid in the case of Systems Engineers. One cannot help but develop empathy for the members of the crew because interaction with them is both frequent and significant.

When the Battlecruiser is in combat and takes damage, all of the officers are performing their duties to the best of their abilities. As part of that process, they will be making

verbal reports (from a library of 315 digitized voices) to the player whenever appropriate. The awesome part of that process is that they can talk over top of one another, which adds incredibly to the sense of pandemonium and chaos that is present in real combat, and has been sorely missing from games forever. This old cinematic trick is called overlapping dialogue, and directors like Howard Hawks and Robert Altman have used it to spectacular effect for decades.

The skill with which crew members perform their duties is a function of their AI ratings, which can improve with positive experience. When they do well, their skills improve. This is a slow process, as it should be, and crew members will not improve when the player directly intervenes to do things for them. Determining when to micro-manage and when to leave the crew to follow their orders is a function of the player's own style of command. BC3K is designed such that players need never

leave the captain's chair unless they choose to do so, but if they do they can literally go as deep into the game's minutiae as their hearts desire. Want to be the Chief Engineer for a while and "tweak" the distribution of the power grid? Have at it. Want to man an individual weapons turret (a la Hans Solo in *Star Wars*)? Make it so. The options, from leading a Marine squad on a commando attack to cockpit jumping during dogfights, are spectacularly varied.

Is the entire scope of this product beginning to sink in? *Battlecruiser 3000AD* is more than a game, it is an alternative life that players can delve into as deeply as they wish, so the limitation on the experience is determined exclusively by the player and not the game!

So again, we return to the concerns expressed earlier about there being no way to win the game, at least in a conventional sense. The answer to that dilemma is more apparent than it first seemed. How does one win at life? By surviving and growing stronger. The *Battlecruiser 3000AD* experience rewards players in like fashion, and those who are willing to buy into that concept will be treated to the richest, most rewarding gaming experience the *digiverse* has to offer!

## PC ACE FEATURE





*F16 Fighter Stick*  
20 programmable functions



*F16 Combat Stick*  
14 functions.  
Programmable when used with the Pro Throttle.



*F16 Flight Stick*  
4 button joystick



*Pro Throttle*  
20 programmable functions. Makes other standard joysticks programmable as well.  
For Mac and PC.



*CH Throttle*  
12 programmable functions

OK, so the **NEW** F-16 Series costs a little more than the cheap stuff. But this is war. Program all the functions you want. Add a throttle and fight with both hands. Get a grip on the most advanced, sensitive flight instruments you'll ever use. Or get accustomed to getting missiles up your tailpipe.

And there's even a three year warranty.





# The Good, The Bad And **The Apache:** Wild Bill Stealey's First Magic Trick.

by Ed Dille



Targeting the nuclear power plant.

Recommended: Pentium, 8 MB RAM, Soundblaster, SVGA, Thrustmaster flight controls. PC CD-ROM.

And to think, it all started over a coin-op called Red Baron. Inspired and motivated by one color wire frame vector graphics, Bill Stealey and Syd Meier formed MicroProse, the world's first big name simulation developer, in the early 80's. Much later, after dozens of successful titles, these two creative visionaries went their separate ways. Meier stayed in the forefront throughout the transition, but Stealey's next

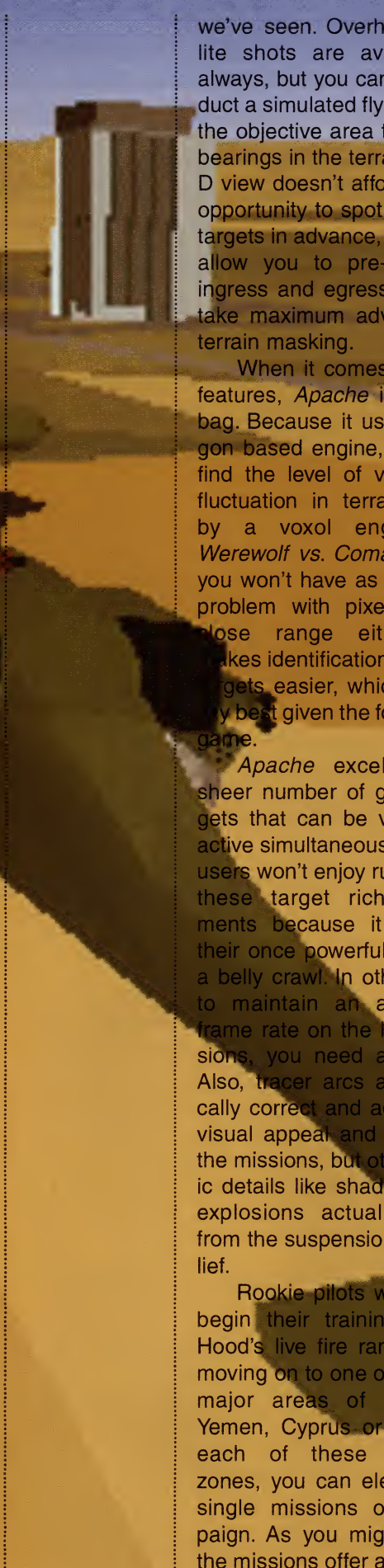
move was the subject of considerable debate among simulations fans. Even after Interactive Magic was formed and its initial line up announced, a decided "wait and see" attitude remained. Now, with the arrival of *Apache*, speculation is giving way to analysis.

Flight simulators run the entire spectrum from arcade style "shoot em' ups", like *Werewolf vs. Comanche* to ultra-realistic offerings, like the *Falcon* series and *Tornado*. Although *Apache* does feature an arcade feature and options like "invinci-

bility," for those players who place greater emphasis on fun than realism, it is definitely being marketed as a serious simulation. As such, we will evaluate it within those parameters.

Since there isn't a large body of unclassified data on the AH-64, Interactive Magic chose to overcome this shortage of source material by working closely with McDonnell Douglas. This collaboration shows in some places but is annoyingly absent in others. For example, the cockpit and MFD designs are faithful to the original despite some streamlining to reduce clutter and make the instrumentation more visible, but the designers neglected to include a sideways velocity indicator, which makes landing and some other maneuvers more difficult to judge. Also, although you can perform button-hooks, flares and other real maneuvers much more realistically than with other helicopter simulations, *Apache's* flight model is still imperfect. Pedals are only marginally effective at low speeds, and only one of the various flight modes of the AH-64 is modeled. Arguably, this is the most common mode, in which the tail will automatically follow the nose, but some purists may feel





cheated at not having to compensate for yaw manually. *PC Ace* thinks most players will appreciate the avoidance of this flight parameter, but again, it is a matter of individual player preference. Ground effect is noticeably absent, but the most major flaw in the flight model is reproducible as follows: While cruising along straight and level at a given speed, pitch the nose up about 2 degrees above the horizon and increase collective slightly. You will see that airspeed actually begins to increase. Sorry folks, it just doesn't happen that way. Having raised these issues, allow us to still add that *Apache* is still light years ahead of the competition in terms of accurately simulating helicopter flight, and it has earned some other praise as well.

First let's consider the variety of play options. You may elect to fly solo, of course, but one of the great innovations of this program is the ability to connect via modem or a serial cable to jointly fly the same helicopter. In this mode, the two players act like a real AH-64 crew, and manage the responsibilities of the front and rear cockpits individually. Naturally, you can also use a modem connect to fly two separate helicopters, but it just doesn't develop that sense of teamwork and camaraderie that cooperative play does. Hat's off to IM on this feature, for it alone makes the purchase price worthwhile. Also important, but less innovative, is the ability to connect up to 16 players on a LAN.

It is an old military axiom that prior planning prevents poor performance. *Apache* helps you fulfill your planning responsibilities as the mission commander with one of the best pre-mission set ups

we've seen. Overhead satellite shots are available as always, but you can also conduct a simulated fly through of the objective area to get your bearings in the terrain. This 3-D view doesn't afford you the opportunity to spot all of your targets in advance, but it does allow you to pre-plan your ingress and egress routes to take maximum advantage of terrain masking.

When it comes to terrain features, *Apache* is a mixed bag. Because it uses a polygon based engine, you won't find the level of variety and fluctuation in terrain offered by a voxol engine, like *Werewolf vs. Comanche*, but you won't have as much of a problem with pixelization at close range either. This makes identification of ground targets easier, which is actually best given the focus of the game.

*Apache* excels in the sheer number of ground targets that can be visible and active simultaneously, but 486 users won't enjoy running into these target rich environments because it will slow their once powerful beasts to a belly crawl. In other words, to maintain an acceptable frame rate on the larger missions, you need a Pentium. Also, tracer arcs are ballistically correct and add a lot of visual appeal and tension to the missions, but other graphic details like shadowing and explosions actually detract from the suspension of disbelief.

Rookie pilots will want to begin their training at Fort Hood's live fire range before moving on to one of the three major areas of operation: Yemen, Cyprus or Korea. In each of these operating zones, you can elect to play single missions or a campaign. As you might expect, the missions offer a wide vari-

ety of objectives and enemy unit types, so you won't grow tired of new sorties as quickly as with earlier titles, like *LHX Attack Chopper*.

The sound routines are excellent, provided you can get them up and running. Bullets whine and thump their targets, explosions reverberate at varying levels of intensity, based on your proximity to them, and when you have a subwoofer and Vivid 3-D Pro, you will feel like you are in the thick of it. Even more so when other members of your squadron are chattering over the command circuit. Some of their messages are window dressing, but others are not! It's up to you as the mission commander to sort them out.

Target acquisition functions like a real AH-64 to the extent possible without using a VR helmet (like the VFX-1, from Forte) to give actual "shoot where you look" capability. You will automatically target the object closest to the center of your display, despite which view you are using, but you can manually target beyond that. The Target Acquisition and Designation Sight offers three displays, including a standard magnified optical sight, television tracking, for use with wire guided Hellfires, and FLIR, for the inevitable night missions.

Overall, *Apache* promises more bang for the buck than most simulators, but individual player preferences make the difference as always (see *Dogfight*, elsewhere in this issue, for an explanation of how flight simulators are differentiated). It is definitely as challenging and different from others offerings on the market as *Gunship* (another Stealey driven project) was when it first appeared. Unless you are completely daunted by complexity or, at the other end of the spectrum, forgiving of





the slightest inconsistency from reality, *Apache* is undoubtedly worth the investment, both in money and time. So strap in, wind it up,

Apache's graphics are not standouts but the flight model is top notch!

and head out for some of the hottest close support action you will find today.

### On Target

Intense, engaging mission designs.

Best helicopter flight model currently available.

Excellent use of digitized sound.

Innovative front seat/back seat two player cooperative mode

Superb mission planning utility

Excellent online manual.

Avionics suite detailed and accurate.

### Missed the Mark

Minor inconsistencies in the flight model.

Heavy Processing power required (but this is an increasing trend across the board).

Graphics are sub-standard in some areas.

### SSI'S IBM CD-ROM THE DEFINITIVE WARGAME COLLECTION

This unbelievable CD-ROM bundle is **ONLY \$30** and includes 14 games plus over 50 additional scenarios. WCS2: TANKS!, Battles of Napoleon, Sword of Aragon, Warlords, Reach for the Stars, American Civil War I-III, Panzer Battles, Gold of the Americas, D-Day, Global Domination, Conquest of Japan, etc. plus additional scenarios for TANKS!, Battles of Napoleon, ACW I-III, Panzer Battles.

\$42 Steel Panthers	\$42 WCS3: Rifles	\$42 Allied General	\$45 Silent Hunter	\$42 Panthers-Shadows
\$15 Battles of Napoleon	\$15 Gettysburg	\$15 Warship	\$15 Waterloo	\$42 Tigers on the Prowl
\$15 Battle of Antietam	\$15 Rebel Charge	\$15 Conflict: Korea	\$10 Clash of Steel	\$32 Custers Last Command
\$15 Typhoon of Steel	\$15 Kampfgruppe	\$15 President Elect	\$10 Pacific War	\$20 Defend the Alamo
\$15 Conflict: Middle East	\$15 Mech Brigade	\$15 Stellar Crusade	\$10 War in Russia	\$30 Road Sumpter-App.
\$15 Shiloh: Grant's Trial	\$15 Second Front	\$15 Sword Aragon	\$10 Carrier Strike	\$44 Operation Crusader
\$15 Storm Across Europe	\$15 Western Front	\$15 Sons of Liberty	\$10 Great War	\$44 Stalingrad
\$15 Wargame Constr. Set	\$15 Red Lightning	\$15 Star Command	\$15 B-24	\$32 Pure Wargame

\$20 **Battlefield Tactics of the 20th Century Manual:** Tactical 3-Ring Binder 80-90 page manual. Can be updated with additional historical OBs, battle commentary, doctrine on periods 1939-1991 coming later in 1995-1997.

We carry Scenario Disks for Steel Panthers, WCS3: Age of Rifles, Battles of Napoleon, WCS2: TANKS!

\$25 Great Naval Battles I plus 3 Scenario Disks \$10 Mo' Slo Disk allows you to slow down fast computers.

V for Victory CDs: \$14 Market Garden \$14 Utah Beach \$14 Gold/Juno/Sword Beach \$14 Velikiye Luki

\$15 Pacific War Editor/Scenario/v. x1.22 \$10 TANKS! Modern Database \$3 TANKS! Revised Database

\$15 TANKS! Ultra Modern Database \$3 TANKS! New Version 1.30 with extensive additional rules!!

\$15 TANKS! WWII Database with European and Pacific Theatres including new Japanese database!

Add \$4.50 (\$6 Airborne) Shipping. CA add 7.25% tax.

NOVASTAR GAME CO.

Hours: 8:00 am to 5:00 pm PST Monday-Friday

PO Box 1813, Rocklin CA 95677

We Accept Visa, M/C, Am. Exp, Checks, Money Orders

(916) 624-7113 • Fax (916) 630-1009



# FLY AND FIGHT LIKE REAL PILOTS DO!

**CHECK SIX™**  
INDUSTRIES  
4203 Genesee Ave. #103-440  
San Diego, CA 92117-4950

Climb into your very own fighter jet and experience the closest thing to real flight possible in your home! Combined with your own personal computer system and any of today's most popular simulation software, our HOME COCKPIT will tremendously enhance your simulated flight experience. Panels are backlit like the real thing. You won't find anything closer to a real aircraft anywhere except inside a full motion simulator!

Our HOME COCKPIT panels are fully programmable so no matter what sim you like to fly, you can do it with ease. No more complex or meaningless keyboard strokes to memorize. Just install the game card in any available PC slot, download your preprogrammed command file and the same switches do the same thing in every sim. You tell them what commands to send to your PC, even multiple keystrokes. Individual panels can be moved around to suit your personal needs. (Shipped with files for most popular sims)

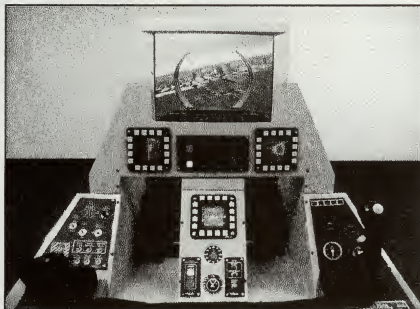
## Your HOME COCKPIT includes:

1. Realistic F-16 Fighting Falcon framework
2. Contoured seat cushions, headrest & shoulder harness
3. Over 180 fully programmable switch functions
4. Complete electronics package and programming software
5. Cockpit backlighting kit and power supply
6. Set of Thrustmaster® flight controls (FCS-Pro, WCS-MII, RCS)

**All for only \$2695**



Visa and MasterCard accepted so don't delay!



## ORDER BY FAX:

FAX a completed copy of this page to:  
**619-549-4308**

## BY PHONE:

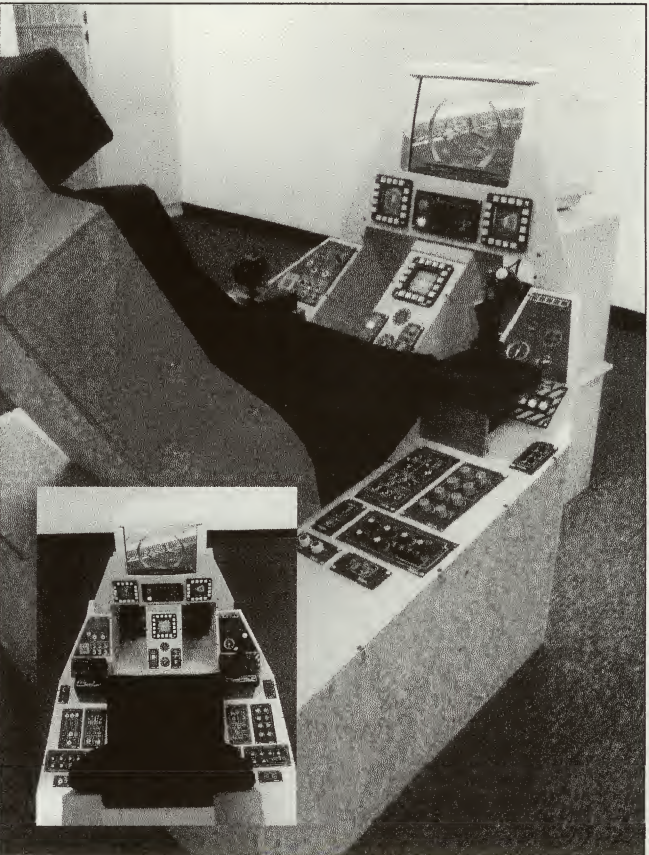
**619-549-3187**

## BY MAIL:

Send check or Money Order to the address in the upper right corner of this page

## Just a sample of the available functions:

1. Flight control functions = 14, Gear, Flaps, Wing sweep, Elevator trim, Eject, Flight deck Ops, you name it.
2. Radar functions = 20, Finally take command of that electronic beast in FLEET DEFENDER or F-15 STRIKE EAGLE III!
3. Armament functions = 12, Make weapon selection simpler in the heat of battle.
4. Communications functions = 15, Tell your wingman where to go!
5. Computer interface functions = 29, No need for a keyboard in your HOME COCKPIT.
6. Forward Looking Infrared (FLIR) = 8, Control slew, magnification, target lock, etc. Great for the F-117 in TFX!
7. Beautiful Multi-Function Display (MFD) units with 16 functions each to control views and your sims MFD's.



## FAX / MAIL ORDER FORM

NAME:				PHONE:	
SHIPPING ADDRESS:					
CITY:			STATE:		ZIP:
QTY.	ITEM NUMBER	DESCRIPTION	UNIT PRICE	SHIPPING	ITEM TOTAL
	C6-0410	HOME COCKPIT - Ace Model	\$2695.00	\$150.00	*1
	C6-0411	ACE Panels & electronics ONLY	\$1395.00	\$25.00	*1
	TM-0100	F-16 Cockpit ONLY (NO electronics)	\$675.00	\$85.00	*1
			SUBTOTAL=		
			CA RESIDENTS ADD		
			7% SALES TAX		
			GRAND	TOTAL=	

\*1 Shipping varies widely with area. We will modify your order to include actual shipping costs and call you to verify changes.  
PLEASE ALLOW 4 WEEKS DELIVERY TIME  
ON LARGE ITEMS, 5-8 DAYS ALL OTHER ITEMS

## METHOD OF PAYMENT (CHECK ONE):

☐ PRE-PAID, CHECK OR MONEY ORDER

☐ VISA

☐ MASTERCARD

CARD NUMBER:

EXPIRATION:

CARD HOLDER SIGNATURE:

## ORDERING AND WARRANTY INFORMATION

PRICES AND AVAILABILITY ARE SUBJECT TO CHANGE WITHOUT NOTICE. ORDERS ARE SHIPPED VIA UPS GROUND UNLESS OTHERWISE SPECIFIED. ALL PRODUCTS ARE GUARANTEED TO BE FREE FROM DEFECTS WHEN SHIPPED. ADDITIONAL WARRANTY INFORMATION INCLUDED WITH INDIVIDUAL PRODUCTS.



# Crusader: No Remorse

Welcome To A Different  
Kind Of Origin Game

by Jason Bender



Origin has always been a developer/publisher that staked its territory out very carefully. The Ultima series consistently stretched the FRPG envelope, while the *Wing Commander* games have set new standards in futuristic flight sims.

Lately, however, Origin has been somewhat less predictable in its subject matter. *Bioforge* initially demonstrated this willingness to try something new and *Crusader: No Remorse* represents a stunning departure from the company's past efforts.

The *Crusader* universe is set on an Earth dominated by the World Economic Consortium (WEC), a tyrannical ponzi scheme erected and sustained by propaganda and total control of all citizen input. Within the WEC system, each

citizen is granted the position of "shareholder". However, this deal just doesn't hold much appeal for the more entrepreneurial members of our species and pretty soon you've got a capitalist rebellion in full swing.

The player is cast as "Silencer", a typical computer game special missions op who can transform a pog into a lethal weapon without breaking a sweat. Silencer eventually winds up fighting with the rebels, earning their respect while completing 15 missions, unmasking a WEC spy and, toughest of all, enduring those nightly news updates.

*No Remorse* offers some exceedingly cool features. For example, almost any on-screen object can be fired upon and hit. You can blow out windows, shoot through walls; in fact, the game, at times, is a virtual orgy of state-of-the-art digital explosions. There's also extensive interaction with the environment. Computers can be accessed for codes (you'll mostly wind up reading your e-mail), and in the industrial areas, leaky pipes, steam, and toxic waste barrels can all be brought into violent play.

There's some serious vio-

lence in this game—when gamers take out factories, the innocent workers are set aflame in vivid detail and run screaming through the parking lot—so it should not be aimed at kids.

Our version gave us lots of problems with the FMV clips, which caused the computer to freeze constantly. There are also 11 save slots, which are either too few or too many, depending upon your play style.

Bottom line: this is a well constructed shoot-em-up which maxes out high-performance systems very effectively. Required hardware is 486/66+ with 8 megs of RAM, 30 megs of hard drive space, double-speed CD-ROM, and Sound Blaster. Suggested configuration is a Pentium 60+, 16 megs RAM, 55 megs of hard drive space, and quad-speed CD.

## On Target:

- Excellent graphics
- Detailed, extensive maps
- Good interaction with surroundings

## Killer explosions

## Missed the Mark:

- 11 Game Slots not enough for this reviewer
- FMV-induced freezes





### Quickie Tips

The folks in the rebellion fight a hard guerrilla-war, and don't have the resources to deal with casualties, so its up to you to keep yourself ticking. As a Silencer, you'll be pulling almost exclusively one-man missions, which means nobody is covering your back.

1. You're working indoors, which means that if you can get to a security station, you can use cameras to spy on the enemy. Whenever possible, use the enemy's technology against them.

2. Round handles often turn on or off steam or fire, which can be used as cover, or even a lethal weapon. Often, steam/fire will block your path and must be turned off.

3. The servomechs in the WEC are nasty contraptions! Now and then you can use a computer to control them, and throw some of the Consortium's heavy firepower right back in their faces.

4. Computers not only contain entertaining E-mail, but valuable codes. Check all computer screens before leaving a room.

5. Never leave a room without scrounging through the pockets of all the corpses. Don't forget to rummage through the shelves and footlockers for valuable items. Keep in mind that the Consortium has unlimited supplies, while the Rebellion has virtually none.

6. Footlockers can be damaged and lose their contents. When a threat is located next to a footlocker, it usually contains something, so don't use high-explosive ammo.

7. Cans explode... people catch fire if they're nearby when it occurs.

8. Explosions can ohurt you, too. Be careful to



keep your distance when you destroy explosive objects or fire heavy weapons.

9. Don't walk on weakened catwalks; you can fall through and sink into the toxic muck. Not only that, but the muck is too poisonous to swim in, so try not to fall in.

10. Line of sight is very important. Peeking around corners is a good idea, especially for playing sniper.

11. Destroy cameras as soon as possible. Plan your assault before you're within their line of sight.

12. The Silencer is well trained and can maneuver well. Roll to the sides to dodge missiles and rolling barrels. Barrels which are on

their sides can be "kicked" to get them rolling by jumping on them.

13. The best way to enter a room is by positioning the Silencer for a roll. When you emerge from a roll, your weapon should be facing a threat. Turning takes time, so position yourself before you leave cover.

14. Traps are frequent. Look for tell-tale signs in walls and embedded in the floor. Once a trap is discovered, it is usually easy to disarm or avoid. Approximately 90% of all traps work on surprise, whereas around 10% are strategy-based. Strategy-based traps are tricky, but can be bested if you stand back and think for a moment.

15. Armor is a last resort, so try not to get shot. In fact, use this strategy in your real life as well.

REMEMBER: You are smarter, faster, and more extensively trained than the WEC troops, but they still outnumber you, so avoid straight-ahead fights and remember that your brain is your most important weapon.





# Steel Panthers

## "DEPLOY! DESTROY! ENJOY!"



Publisher: SSI

Producer: Gary Grigsby, and SSI Special Projects Group

Type: PC CD-ROM

Recommended: 486/33 or better, 8 MB RAM, uncompressed hard drive, double-speed CD-ROM drive, mouse, graphic support is VGA video adapter or SVGA, sound support is SoundBlaster and 100% compatibles. Not compatible with Windows 95.

*Steel Panthers*, a hot new WWII combat simulation set in the war-torn European and Pacific theaters, offers players time lines that range from Poland in 1939 to a possible

Available info on units is heavily detailed.

late-1945 WWII option, with play available on both tactical and operational levels.

In addition to the basic combat units, gamers are treated to the welcome addition of combat support in the form of aircraft, motorcycles, snipers, and even ships to supply bombardments. While *Panthers* is played through the use of traditional hex-grid maps, the graphics are truly outstanding for a game of this type, maintaining the scale to sufficient depth that individuals can be seen. Additionally, the game is laced with actual WW II combat footage, all couched within an interface that is both intuitive and user-friendly.

The scope of *Steel Panthers* comprises a total of ten Campaigns and 62

Scenarios which should be enough to provide sufficient value to even the most hyper-active Patton-clones. The pre-fab scenarios can take as little as a half-hour to play while the Long Campaigns could take several days, depending on the experience and expertise of the gamer.

The forces employed for the scenarios are pre-constructed, but when playing Campaigns, points are available, allowing users to buy the units of their choice. This is accomplished by expending Core points to procure the forces required for the entire Campaign, or by surrendering Support points on forces that will assist the Core force for each individual battle.

While the pre-planned Campaigns and Scenarios are fun in and of themselves, there are other ways to get into battle. One method is the battle option which includes the forces of all of the major and several of the minor contenders in the war. Here the player has the choice of deploying different country's forces in Assaults, Advances, and Meeting Engagements in a multitude of ways. User-selectable options include: battle size; the map; month and year; hit and spotting difficulty; and rally difficulty. The player can select these forces using Auto Buy or, once again, by simply allocating points in the pre-battle phases. This gives the user the opportunity to generate some fascinating "what-if?" scenarios. And with the Scenario Editor, users can roll-their-



own battles by modifying any of the pre-fab scenarios—within the constraints of availability for the time period and the maps which exist in the database.

Even though gamers can jump right in and start playing, it is best to at least scan the rule book. Gameplay is turn-based and allows players to do battle against either the computer AI, or on-line via E-mail. The engine allows movement, fire-or both depending on each unit's allowance and the opportunity for fire during enemy movement. The system also highlights the hexes which can be moved to and/or fired upon, in what is becoming de rigeur for wargames these days. Finally, when employing the Battle option, the difficulty of spotting and hitting enemy units becomes adjustable, giving the game tremendous flexibility and even as your skills improve, the program can be fine tuned to make sure things don't get too easy.

Given the past successes of Grigsby & Company's SSI games, *Steel Panthers* will have a readymade audience. Toss in the much improved graphics, its intuitive play, and gritty, WW II combat footage, however, and it may pull in a strong crossover audience, much as Westwood's *Command & Conquer* has. Hardcore hex-gridders, meanwhile, should be delighted. So gear up and get ready; *Steel Panthers* is ready to roll.

### PC Ace Extra-Steel Panthers Game Tips:

- Any unit gains a defensive bonus by moving even if it only moves one hex in its turn.
- Remember that tanks are crucial on the battlefield to retain the combined arms concept.
- If you are attempting a rear attack on any enemy except infantry, try to stop three hexes from the unit or it will face you and negate the flank bonus.



The graphic detail of the *Steel Panthers* maps is outstanding!

### On Target

Outstanding graphics and background maps

Scenario generator for battle design

Authentic WW II combat film footage

### Missed the Mark

The standard 2D view from above battles is not exciting

The multitude of games based in this time period forces it to compete in a crowded battlefield



# Caught Between A Rock And A Hard Place

by Tom "KC" Basham

*Somewhere, in some far away land, an evil tyrant resides in a black marble tower atop a jagged mountain peak and contemplates the future of the gaming market. His glistening raven-black armor grates against the icy stone throne, generating a fearsome cacophony against the otherworldly silence of the vast, malign chamber. Hordes of hapless slaves cower in a pit at the tyrant's feet, awaiting his next utterance. After what the slaves perceive as eternity, the tyrant pontificates: "Go ye forth and build a new computer game," he commands, his words striking off the stone walls like flinty spears. "Fashion the design so as to frustrate even the most vigorous mind, and mold the features in a manner calculated to drive the users mad. When you are finished, test the game for bugs. If there are none, make some. If there are only a few, add more. Infest it. Then pack the box with advertisements, mail-in cards, and at least one sheet of paper with last second loading instructions which, if not followed precisely, will render the user's computer inoperative." No one moved. "Well?" the tyrant snarled. "Get to it!"*

When the average computer gamer tries to imagine what a game publisher must look like, the results are usually less-than-flattering. At best, the gamer imagines a faceless, emotionless entity like an anthropomorphic game factory. At worst, the gamer imagines a scene not unlike the one described above. And, given the number of bugs and awkward interface problems sim fans recently encountered in the *Navy Pacific Air Warrior Fighters Over Europe 3.0*, such a cynical (if theatrical) assessment is not totally unjustified.

Here's how the sad cycle works, using the aforementioned product as an unfortunate example: sim gamers are hyped for months on

products such as NPAWFOE 3.0, happily absorbing and embracing the hype and rumors that fill the bulletin boards and networks. (After all, a simulation reported to model the real-time Newtonian flow of Top quarks through quantum fissures in the lifting surfaces is worth some waiting.)

Next, ads for the game start turning up in the magazine mail order ads. How much? The gamers clamor. The answer is always the same: "CALL." Amazingly, NPAWFOE 3.0 held its initial price for several months despite most other products' values declining as they aged into oblivion. Of course, what doesn't exist can hardly grow old. Retail stores, desperate for attention, began placing



empty NPAWFOE 3.0 boxes on the shelves in an intentional attempt to sham the unwary consumer.

By this time, the on-line sim mafia had debated the merits of Top quarks and quantum fissures in the wings to death. After several flame wars, the game company conceded that they weren't really modeling Top quark flow; they are really modeling the positions of individual positrons in the airflow in real-time, but using a table look-up to determine the quark positioning. Well, this was certainly going to be the sim to end all sims. At long last, the Fedex package containing NPAWFOE 3.0 arrived on the doorsteps of our eager game fans. After a long and tiresome battle with the installation program, many gamers discover that their computers lack the muscle to run this mighty program with its ultra-high resolution graphics. They also become all-too familiar with its fondness for crashing and generally shrugged their collective shoulders. Ripped off again. And one more pixel is added to the user's vision of game publisher as slaving, greedy monster.

Speaking of which, let's cut back to that black tower on the mountain. A game designer,



feeling like a shackled slave, sits in a cubicle awaiting the latest edict of doom from the management. When that edict arrives it initially appears to be good news: create a new flight simulator.

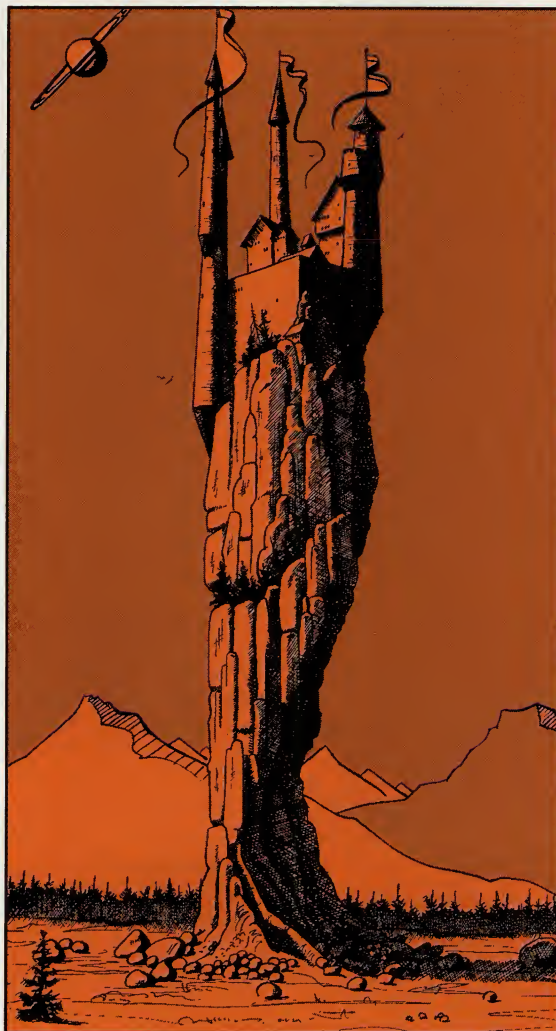
Then, the developer reads the rest of the edict: have it ready by Christmas. It falls like a hammer blow.

The developer diligently toils through long hours and coffee-spawned weekends, making good use of the showers down the hall and living off popcorn from the company's limited-selection vending machine. Despite excellent progress, it's becoming increasingly apparent that the game will not be 100% ready to ship by the date marketing demands it. When the developer voices concern over scheduling he's given two choices: 1) ship the game at the earliest possible moment and release a patch later to fix the bugs, or 2) keep the product in house but stop getting paychecks until something hits the store shelves and starts generating revenue.

Good intentions aside, the rent has to be paid and groceries have to be put on the table. The developer resigns to option #1.

The example of the gamer and the game developer cited above are not twisted, extremist examples of a few individuals operating on the fringe of sanity. Most gamers and game developers find themselves in these respective positions at some point in their gaming career. I have people I consider good friends at nearly every company producing flight simulations and military games and I can honestly say that none of them intentionally designs a flawed product or purposely cuts corners just to annoy the game buyers.

I know of one relatively small company that set out to produce a new military wargame (we'll call it Product X) a couple of years ago. The original design spec was incredible and the market eagerly anticipated the product's arrival. When the product finally shipped—a good 6 months after the game publisher had announced it would arrive—the market generated a small revolt. The product was slow (even on high end 486s and Pentiums), it had bugs, and lacked many features the buyers had expected. Does that story sound familiar? Ah, but look behind the curtains for the story behind the story: the company in question had financial problems to begin with. When it became apparent that the original design



specification couldn't be completed in the original schedule constraints, the company decided to keep working on the project and "do it right," despite the spectre of possible financial ruin. The company needed to get the product on the shelves to generate revenue or face a world of hurt. Eventually, the cash reserves ran out and there was no money left to pay the programmers. Further, there wouldn't be any money for paychecks until this product got on the shelves. Despite the pressure to generate revenue, the design team elected to continue work on the product. To be exact, some personnel went nearly six weeks without a paycheck. In the end, the game finally shipped and the company ultimately survived, thanks to the incoming revenue, but the final product still wasn't totally satisfying.

Stories like these are commonplace. Several game companies have showers installed to accommodate the large number of employees working 14 to 20 hour days, seven days a week. I know stories of companies working similar long days through Thanksgiving holidays in an effort to get their product out the door for Christmas. When marketing dictates a specific schedule, first the programmers suffer during the development, then the buyers suffer when the product doesn't meet their expectations.

By now you're probably asking, "OK, so everybody has a hard life; what's the point?" The point is that the game reviewer is caught in the middle. Most of us writing about computer games are good friends with both the people writing the games and the people buying the games. On the one side, our friends



are practically assassinating themselves with 90-hour work weeks to crank out a product, and on the other hand our gaming friends are scraping together the cash to buy the latest game. Many gamers have families and mortgage payments; they're certainly not poverty stricken but they don't have the spare cash to buy every new game that hits. They turn to the software reviewers to help them decide how to allocate their gaming

a review of the aforementioned Product X, it would have been my responsibility to the readers to accurately detail the positives and negatives of the game, even though the result would quite likely have been hurtful to the designers. As a reviewer, I do not have the luxury of giving individuals or publishers "slack" or the "benefit of the doubt," regardless of the relationship I may have with that particular company. I have to



budget.

The reviewer, therefore, has a responsibility to the game publisher to accurately describe the product to the reader. Simultaneously, the reviewer has a responsibility to provide accurate and complete information on the product to the reader. In the end, it's not a particularly easy job.

If I had been tasked with

work strictly within the confines of what is available to the consumer, not what the publisher would have liked to have shipped, but couldn't, no matter how good the excuse.

*PC Ace* will cover "light hearted" simulations right along side "hardcore" products. We'll never chastise a product because it isn't the kind of game we prefer.

Graphic Image  
Courtesy SSI

Instead, we'll analyze each product and its overall features and determine how they compare with other products of the same type. If a game bills itself as a "fun over realism" entertainment, we'll ask only one critical question: how well did it achieve its goal? If a product bills itself as a "hard core realism" product, we'll measure it with a different ruler.

Everyone sim fan has a different threshold for realism versus fun. For every person that loves *Falcon 3.0*, there's another individual that finds it complex and boring. A review cannot reduce the product to a mere rating that will be perceived as "accurate" by the entire readership. It's just not possible. Consequently, our reviews could be likened to "product descriptions" where we simply explain the product in detail, then let the readers determine if that product is for them or not. We want our reviews to give you the data you need to make your purchasing decisions, rather than simply judging a product as "good" or "bad."

*PC Ace* is dedicated to producing only unbiased, objective, informative, and accurate product reviews. We don't force our writers to work within strict page constraints, we give reviewers the space they need to adequately cover the product. When we are ultimately forced to point out flaws with a particular sim, we surely take no pleasure in it. In the end, *PC Ace* wants the same thing the game players and the game producers want: bigger and better simulations. Only by objective analysis and candid discussion of both the strengths and weaknesses of each new release can we hope to achieve that.



# Thrustmaster TQS

## (Requirements: Thrustmaster FLCS)

After a few months in a holding pattern due to problems acquiring sufficient quantities of plastic, Thrustmaster's newest addition to their product line, the Throttle Quadrant System (TQS) has finally landed. Furthering their new F-16 motif, the TQS significantly ups the stakes in a market started by Thrustmaster in the first place.

Beginning primarily with the F-15, the USAF followed an ergonomics theory called "Hands on Throttle and Stick," or HOTAS. Simply put, HOTAS means ensuring all functions the combat pilot requires during battle are available without the pilot ever removing his hands from the



Thrustmaster's newest flight accessory, the TQS is perfect for the arm-chair aviator who thought he already had everything he wanted.



throttles or stick. Through their WCS line of products (which resembles the throttle grip used by the F-15) in conjunction with the FCS line of joysticks (which is molded after the B-8 grip used in the F-15 and other aircraft), Thrustmaster brought F-15-style HOTAS technology to the PC-based flight simulation world. The original WCS Mk I came pre-programmed from the factory and required regular ROM upgrades to support new products. Next followed the WCS UPROM, an update to the Mk I which allowed basic programming of the Mk I through the keyboard inter-

face. Both products served admirably, but were severely limited in terms of flexibility and programmability. Enter the WCS Mk II. The Mk II introduced full user-programmability, including macro support and the ability to program the four analog buttons found on standard joysticks. Time and technology marches on, though. The USAF's F-16 has advanced HOTAS technology beyond that found in the F-15. Subsequently, Thrustmaster has maneuvered their product line to this level of technology. Their latest joystick, the FLCS, is based off the F-16 control stick. Their newest throttle controller, the TQS, is a replica of the F-16 throttle grip.

First and foremost, the TQS requires the Thrustmaster FLCS. Unlike the WCS line, the TQS will not operate properly unless connected to the FLCS. Users specify commands for the TQS when they program the FLCS. The FLCS subsequently communicates those commands to the TQS. Without being connected to a FLCS, none of the TQS buttons are programmable although the analog throttle will still work.

The TQS includes a throttle movement, two additional analog pots, 14 programmable buttons, and a trackball.





throttle moves in a smooth, realistic arcing motion with realistic detentes indicating "idle" and "afterburner" throttle positions. As with real-world throttle controls, the combination of arcing motion and correctly positioned detentes reveal the throttle position to the user through "feel" alone.

The TQS includes a throttle movement which, like the WCS, can be used as either an analog or digital device and provides all functionality available from the WCS. As an analog device, the TQS throttle merely acts as the Y axis of the second joystick port. In digital mode, the TQS sends user-programmed key sequences as the throttle moves. The TQS supports throttles that use single keys, such as the "+" and "-" keys, to control power as well as products that use a series of keys, such as the numbers "1"

through "9," to increase power in steps.

Early versions of the TQS included a normal trackball. Quality control and supplier woes forced Thrustmaster to adopt a different type of "multi position" switch similar to the mouse control found on many laptop keyboards. For consistency, we'll continue to refer to this control as a "trackball." This trackball operates as a normal mouse/trackball, configurable as either a two-button Microsoft mouse or a three-button Mouse Systems mouse. Button T1, activated by pressing the trackball, acts by default as the left mouse button with buttons T6 and T3 available as the middle and right mouse buttons. Keeping with Thrustmaster's goal of total user programmability, the user can alter which of those three buttons maps to which mouse button. Further,

the trackball itself can be programmed as four buttons, T11 through T14, instead of operating as a mouse. It's not entirely clear, however, if that arrangement is particularly usable since the trackball has no rotation limits and users can easily "hit the wrong" button with a careless flick of the thumb. Products, like MicroProse's F-14 Fleet Defender, that make heavy use of the mouse for radar operation will benefit greatly from the standard trackball functionality.

### EXTRA ANALOG CONTROLS

Interestingly, the TQS introduces two additional analog controls named antenna (ANT) and range (RNG) pots, based on the functions these controls perform in the real F-16. RNG and ANT pots use implementation schemes similar to the throttle movement.

### TYPE 1 OPERATION

First, pots can be programmed to generate a specific character when centered, then generate a "step up" and a "step down" character when the pot is moved either way. For example, the programming string looks something like: "10 < > C" which translates to: "Generate the '<' character when the pot is turned left. Generate the '>' character when the pot is turned right. Generate the 'C' character when the pot passes through center. If the pot is moved from maximum left to maximum right (or vice versa), generate a total of 10 characters."

### TYPE 2 OPERATION

Second, each pot can be programmed to generate a specific sequence of characters. The programming string looks something like "9 1 2 3





4 5 6 7 8 9" where the first "9" indicates there are nine values to be scaled across the travel. Moving the pot from full left to full right would generate the string "123456789" and reversing the procedure would generate "987654321."

How exactly would one use such devices? First, and probably foremost, players without analog rudder pedals could use the RNG pot (which basically rotates side to side) to generate digital (i.e., keyboard) rudder commands. In the case of *Aces of The Pacific* and *Aces Over Europe*, players could program the RNG pot to generate a series of "<" and ">" characters as described in the first example. Although not as convenient to use as physical rudder pedals, this offers a cost effective solution to TQS users lacking rudder pedals.

Secondly, the ANT and RNG pots on the real F-16 grip control exactly that; the ANT knob controls the positioning of the radar antenna and the RNG knob controls the ranging scale of the radar. Accordingly, these two devices on the TQS naturally lend themselves to radar controls. Consider Falcon 3.0's High Fidelity Radar (HFR) mode for example. HFR uses F9 and SHFT+F9 to control the width, or azimuth, of the radar scan along with F10 and SHFT+F10 to control the maximum range displayed on the multifunction display (MFD). The following program shows one method of controlling the HFR radar:

```
RNG 1 3 F9 {SHF F9}  
ANT 1 3 F8 {SHF F8}
```

In this example, the F9 and SHFT+F9 keystrokes are assigned to the RNG pot. The F9 and SHFT+F9 keys control the HFR radar azimuth. The

RNG pot rotates side to side, making it a natural choice for the azimuth control. "RNG 1" indicates the user wants a "type 1" digital device. The number "3" indicates moving the pot from full left to full right (or vice versa) should generate three characters. "F9 {SHF F9}" instructs the TQS to generate the F9 keystroke when the pot is rotated to the left and SHFT+F9 when rotated to the right. Similarly, the ANT pot rotates forward and backward, making it suitable for range controls. "RNG 1" specifies the RNG pot to operate as a type 1 device. The number "3" again indicates moving from stop to stop generates three characters. Moving the RNG pot one direction generates F10; moving it the other way generates SHFT+F10. Operating the radar thusly takes some practice. Players must make sure the RNG and ANT knobs are in the "appropriate" position before starting software, otherwise the knobs could be "out of sync" with software. Moving the knob to the desired position generate too many or too few keystrokes, leaving the item in the game (in this case the radar range or azimuth) out of sync when the knobs are rotated fully either direction.

### DIGITAL INVASION

The TQS provides another interesting feature: users can program the joystick and rudder pedals. Obviously, since the TQS requires the FLCS, the FLCS buttons are fully programmable. The TQS, however, let's users specify digital commands (i.e., keystrokes) for both joystick analog axes as well as the analog rudder movements. How? Both the joystick and rudder plug into the TQS. Three programming commands, JSY,

JSX, and RDDR, specify what keystrokes should be generated by each axis instead of an analog signal. JSY, JSX, and RDDR can be programmed as either type 1 or type 2 devices (as described above), or as an additional "type 3" device.

Type 3 operates basically the same as type 1. One character is generated when the device is moved one direction, a different character when the device is moved the opposite direction. Type 1 devices, however, generate a fixed number of characters when the device is moved from stop to stop. If you move a type 1 device only a short distance, only one character is generated. Type 3 devices generate repeating characters. When the type 3 device is left of center—any distance left of center—the device continues to generate the specified "left" character. This system appears handy for users that have rudder pedals but play games that do not support analog rudders. An application for programming the joystick axes is not immediately obvious, but the necessary support exists should such an application arise.

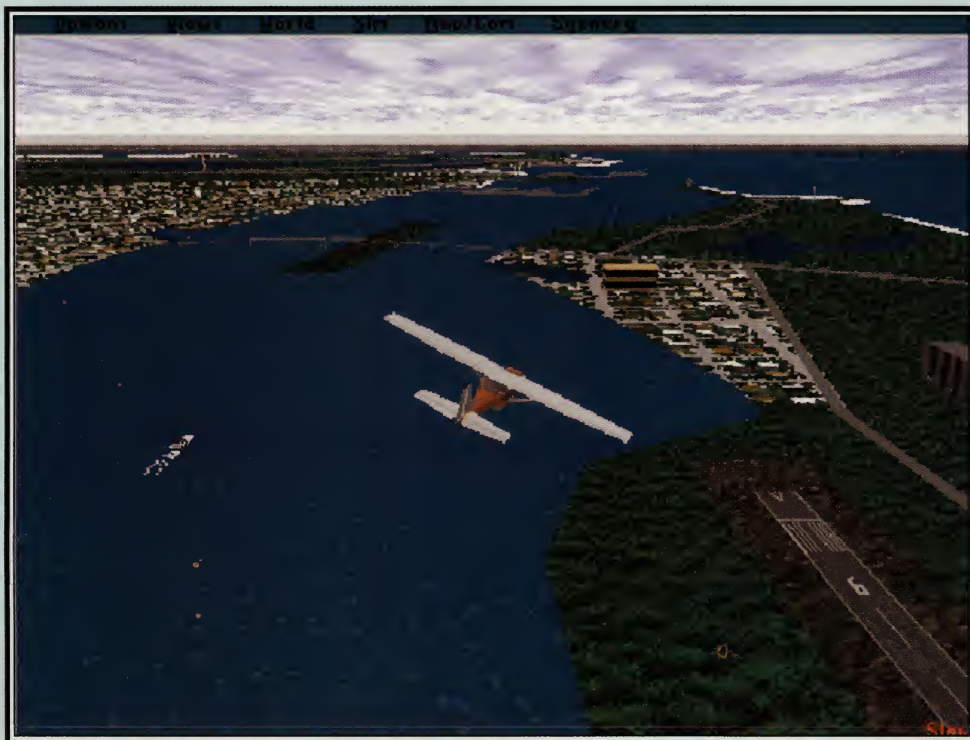
In summary, the TQS is a superset of the WCS; it supports all WCS functions and more, but only when connected to a FLCS. Further, users can download WCS ADV files directly to the TQS without modification. The button positioning has obviously changed, possibly making old WCS programs applied to the TQS unwieldy, but the compatibility does exist. The TQS and FLCS team look to be a worthy successor to their WCS and FCS predecessors.



# The Sim Pilot's Guide to the Caribbean

## Part 1

by Rick Lee



*Microsoft Caribbean Scenery Enhancement* may not be the newest scenery add-on available for *Microsoft Flight Simulator V.5* (FS5) but it has built itself a surprisingly strong cult market niche. Microscene, Inc. of San Ramon, CA, which designs all the FS5 disks bearing the Microsoft trademark, is run exclusively by the husband and wife team of Ed and Stacy MacDonald, with back-up provided by a lone support staffer. In a business filled with teams of specialists vying to stretch the software envelope through manpower and macro-technology, this Mom & Pop mentality may strike some as anachronistic, but it seems to work just fine

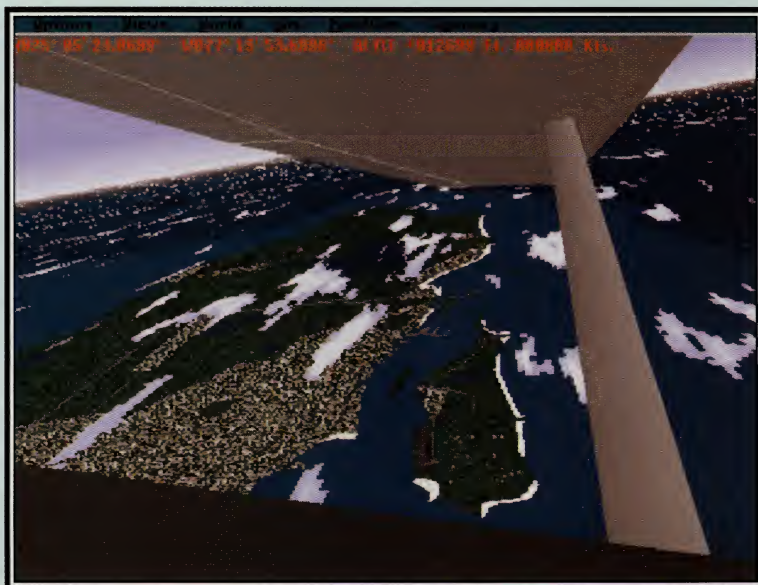
for the MacDonalds.

According to Ed, the art of scenery design boils down to compromise; ie, how much

detail can be squeezed into a limited area? How large a geographic area should the scenery package include? Additional detail looks good up close, but high grade texture mapping can significantly slow down the frame rate, which, in turn, detracts from the realistic feeling of flight.

Customer feedback on previous projects—such as *Microsoft Paris* and *Microsoft New York*—largely approved of the level of available detail, but expressed displeasure with the constricted flight area which was available to them.

The MacDonalds intended Caribbean as the antidote to that complaint, providing virtual pilots with grand vistas featuring all the islands of the West Indies, and the results seem to bear out their intentions. "It's a big hit," Stacy MacDonald reported enthusiastically, with users reportedly





delighted with options such as the ability to fly from Miami to Venezuela, a distance of some 1200 miles—the equivalent of flying from New York to Miami.

### Getting the Most From The Experience

Three things are required to maximize the Caribbean experience. First, computerists using *Flight Simulator* version 5.0 or 5.0a must keep in mind that the Caribbean scenery was originally designed to interface with *Flight Simulator* version 5.1. While the software will run with the earlier editions, the product improves exponentially when using the new texture seeds in version 5.1, with the biggest difference being the quality of the water textures, which don't exist in 5.0 versions.

The second rule of thumb for getting most most out of your flight sim experience is: treat the scenery as if it were the real world. Resist the temptation to take a quick look around by pulling up various airports from the menu list or using the "slew" feature. You'll savor the various surprises much more fully if you find them by flying to them. Pick a starting point, such as Miami or Key West, as your home base and explore this package just as you would the real world, flying from home base to various points of interest. Each time you want to stop, land the aircraft, stop the engine, and "tie it down" by saving your adventure in a situation file called NEXT.STN. Make NEXT.STN your Startup Situation so every time you boot the program you'll begin exactly where your trip left off in the last session. Your FS5 experience will subsequently take on the feeling of an actual journey instead of a series of



pointless flights. Fly it in real time as realistically as you can and you'll be in for many hours of satisfying entertainment.

Third, use only real-world charts. The charts included in the slim manual are too small, lack detail, and contain too many errors for serious simulation enthusiasts. Instead, try using "World Aeronautical Charts" (called WACs). Similar in appearance to the more familiar US "Sectional" charts, WACs cover twice as much area. The WAC charts CH-25, CJ-26, and CJ-27 cover most of the West Indies. You can order these from Sporty's Pilot Shop (call 1-800-LIFTOFF or 1-513-732-2411, or Fax 1-513-732-6560 to obtain a catalog). If you are not familiar with real-world aviation charts, the Sporty's catalog is an education in itself. Flying the Caribbean is a joy with these charts.

Caribbean includes enough detail and visual reference points to permit users to fly just about everywhere in the islands in strictly VFR flight. Islands can be recog-

nized from the air by noting the shapes and topographical features of the landmasses, the locations of cities and towns, roads, and various other visual references such as reefs, lighthouses and weather balloons. There are many, many private airstrips in the Caribbean that are not open to the public. These strips were left out of the Microsoft documentation for privacy reasons, but are included in the scenery. Using the real-world charts will provide you with documentation for these.

Serious players should also consider ordering *The Pilot's Bahamas and Caribbean Aviation Guide* from Pilot Publications, ISBN 0-938923-04-8. This difficult-to-find book includes aerial photos of the airports and tons of interesting information, and can be obtained direct from Pilot Publications: 400 Connolet St.; Brunswick, GA 31520; (912) 264-4195. The price is approximately \$US30 dollars, but they'll sell any available outdated copies at a discount if you mention



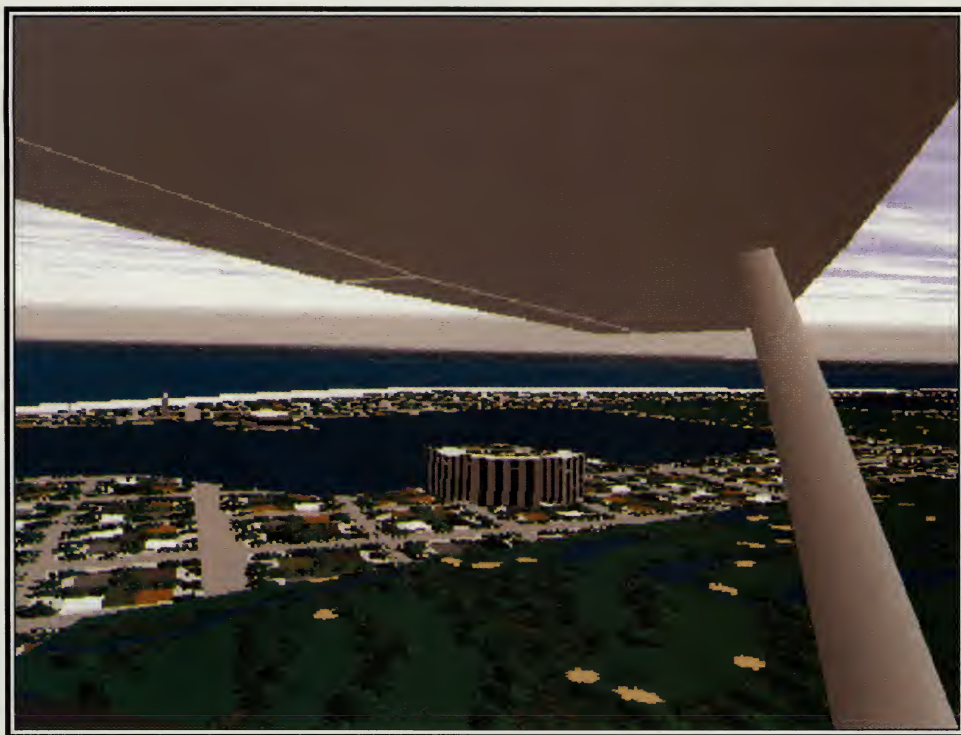
that it is for use with *Flight Simulator*.

### **First Flight Plan: Florida to Nassau via Freeport and Marsh Harbor**

The following route will get you started as an island hopper. Until BAO releases its *FS Flight Shop*, (which allows users to create new aircraft) the Cessna 182 is the best choice for island hopping and sight seeing. Using the "World/Airports" menu, place your Cessna at Kendall/Tamiami airport, just southwest of Miami. To see the sights I'll be pointing out as your virtual tour guide, you will need to set your Scenery Density to "Very Dense", and the time as "Morning/Dawn." The prevailing winds in the region are out of the southeast so a gentle breeze of 5 to 10 knots coming from 135 is recommended. Users gifted with a Pentium-class computer should go ahead and set up as many cloud layers as they desire. They look wonderful but they do reduce the frame rate. If you are having trouble maintaining an appropriately smooth frame rate, then set the options to a "severe clear" day.

You are now cleared for lift-off on runway 9L. Take off and climb to only 1500 feet as you maintain runway heading. Activate your ADF on the panel with the Shift-Tab key. Tune your ADF radio to the 204 NDB which is near Miami Beach and head for that transmitter. This will be a VFR flight and as such we'll keep our altitude at ODD thousands plus 500 feet while heading easterly, and at EVEN thousands plus 500 feet while heading westerly.

As you near downtown Miami, you should spot a golf course on the left and then glimpse the Orange Bowl off



to the distant left. You may want to detour and circle the stadium before leaving the area. When you pass over that NDB, you'll also be passing world-famous Miami Beach, so check out that beautiful sand and ocean breakers slamming against the shoreline below.

At this time, turn due east and climb to 3500 feet. Trim for the fastest cruise—speed you can muster safely about 145 to 150 knots. Then tune to the Bimini VOR on 116.7. Set your OBI to a heading of "95 degrees TO" and intercept that radial. With a little wind set up, you'll have a bit of work to do staying precisely on that radial and altitude. You'll probably have to track a bit to the south to maintain course. Use the autopilot to hold your altitude and course on the VOR, but leave yourself a little work-load. It's a long trip ahead and you'll get bored easily if you don't have anything to keep up the interest level from here on in. If you haven't yet learned to use the "Constant Speed Prop" feature of FS5, this is the ideal

time to start, as it will give you even more to think about.

Take a look out the back window and watch North America fade into the distance. After all, you may fall in love with the islands and it may be a long time before you set eyes on the virtual coast of Florida again.

When you arrive at DME, 20 miles from Bimini, note the ocean-going traffic at 10 o'clock low. Whenever I spot any ships at sea, I play a little game with *Flight Simulator* that I call "binocular spotting". FS5 has an undocumented feature that allows users to pan and tilt their viewing angle. Pan your view to the left by hitting the keypress-combo Control+Shift+Backspace. You can then pan back to the right using Control+Shift+Enter. Pan up and down by hitting Shift+Backspace and Shift+Enter. Try to get the ship directly in the center of your view screen and then hit the "[" key to activate your View Zoom. Hit the plus and minus keys to zoom in to a realistic binocular magnification of



# The Ultimate Flight Experience

## Introducing the total Flight Simulator adventures from BAO

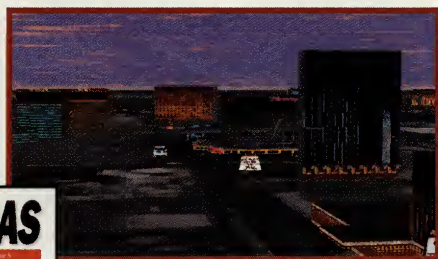


BAO Publishing, developers of Microsoft® *Flight Simulator*® presents the ultimate flight simulation experience with BAO's *Europe 1*, *Las Vegas Scenery*, *Flight Simulator Flight Shop* and *Tower*, the most realistic ATC simulation available.

Feel the tension mount (and the sweat start) as you direct heavy traffic from the tower at Chicago's O'Hare airport; take a chance and play the odds in Vegas as you complete a fly-by of the casinos and surrounding desert; proudly step back and admire your latest plane design with custom colors and graphics all ready for her maiden customized flight adventure or fly the Alps and discover Europe from the air. All this and more is possible with BAO. File your flight plan today and start your adventure.

"A sure bet for computer pilots who demand realistic scenery"

—Greg Harris,  
Editor of  
Full Throttle



Challenge your skills with a fly-by of Hoover Dam and other famous Las Vegas landmarks.

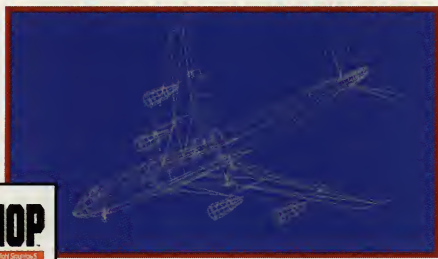
*Las Vegas Scenery* offers you startling, realistic, 3D-level detail of Las Vegas and the surrounding desert. The scenery combines actual satellite images with special aerial and ground-base

photography to faithfully recreate more than 4,000 square miles of the Nevada landscape. Tour scenic Lake Mead, the famous Vegas "Strip" or catch a stunning view of Hoover Dam, one of the man-made wonders of the world. You set the itinerary.



*Europe 1* includes over 100 airports with taxiways, moving objects, unique buildings and approach lights.

*Europe 1* lets you explore from the air the scenic countries of Germany, Austria, Switzerland and the Netherlands. You'll discover beautiful cities like Berlin, Munich, Vienna, Geneva and Amsterdam. All major roads, waterways, lakes, cities, the Alps and landmarks are realistically recreated including all IFR/VFR airports. Experience Europe from your own cockpit.

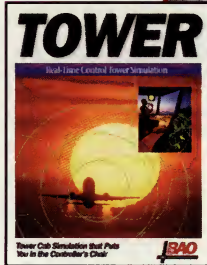


An easy-to-use (windows-based) aircraft factory lets you design your own plane.

*Flight Simulator Flight Shop* puts the tools in your hands. You build, customize and paint your own planes and a flight dynamics editor allows you to specify the flying characteristics.

Share your designs with other flight enthusiasts through BBS's such as CompuServe®. Create your own flight plan and send it to the built-in Flight Service Station (FSS) and then hop in your flight simulator airplane for an ATC controlled flight.

"Best of Show"  
at C.E.S.  
—Awarded by  
Game Bytes  
Magazine



Direct the flow of arriving and departing aircraft at a variety of airports, including Chicago O'Hare..

With *Tower* the responsibility is all yours! As a tower controller, thousands of passengers will rely on your ability to make split-second decisions. You'll handle realistic aircraft takeoffs, landings and ground movements through a 360 degree panable window view. Based on FAA and Transport Canada's professional training simulation software, *Tower* puts you in the middle of all the action.



See your local retailer or call:  
**(217) 356-0188**  
for more information



around 8-to-16x. Try to hold the ship in your "binocular" view as you fly past. The "binocular trick" will also be useful as you approach islands and you want to decide whether or not something that you see is actually the airfield or just a beach.

When your craft reaches Bimini, you can land and make this the end of your first leg, or you can opt to continue on. When you do depart Bimini, remain at 500 feet and check out the beaches on the island to the north. Take note of the large cabin-cruiser off the north point of North Bimini Island; could it be the fabled Monkey Business?

You are now on course for Freeport on the island of Grand Bahama so climb to 1500 or 3500 feet at pilot's discretion. Tune in Freeport VOR on 113.2 and intercept an 033 degree course toward it. As you leave Bimini, note the water color. You are seeing the shallow area called the Great Bahama Bank which you can see on the WAC chart. "Bahamas" derives from the Spanish "bajamar" meaning "shallow waters." At DME 43 miles from Freeport you'll also see coral reefs. In the middle of that reef is the Great Isaac Island Lighthouse, so wag your wings at the lighthouse-keeper as you pass.

As you near Freeport, the second largest city in the Bahamas, descend to 500 feet again and tour the coastline. The best way to view scenery here is to pass it on the right and use your pan-left and pan-down keys to scope it out. You don't look at scenery from a real aircraft by looking out the front and you shouldn't in FS5 either.

To the west of the city is a massive refinery tank-farm complete with tanker-ship. You can see several resort



hotels and a lighthouse to the east. If you are not stopping at Freeport, continue along the coast to the east and keep a watchful eye out for the tethered radar balloon. Note the restricted airspace on the WAC chart around it. Continue on to the west end of the island where you'll pass Deepwater Cay Airstrip (private).

Tune the Marsh Harbor NDB on 361 and press on to the east. The Marsh Harbor area on Great Abaco Island is stunning from the air with myriad islands surrounded by coral reefs. While you're there, be sure to check out the candy-striped Hope Town Lighthouse just off the coast, due east of Marsh Harbor. Follow Great Abaco Island to the south until you run out of land. Since you'll now be headed westerly, fly at EVEN thousands plus 500. Tune in Chub Cay NDB on 302. This course will take you over the Berry Islands which contain several private airstrips.

When you reach Chub Cay, tune in the Nassau VOR on 112.7 and head straight for it. Note that the color of the water changes again as you depart Chub Cay. Look on the WAC chart if you have it and you'll see that a strip of deep

water emerges from the Atlantic and goes around Nassau to the north, then runs past it to the south. This is called "The Tongue of the Ocean" and it's an important visual navigation feature. Your heading toward Nassau will be around 140. Watch for ocean-going traffic at about 15 miles DME. When you spot a cruise ship in your binoculars, you may be overtaken by the urge to descend to an altitude under 500 feet and buzz the ship while hanging out the window, waving madly.

When you make out the island of New Providence, you'll see Nassau, the capital city of the Bahamas, facing you on the northeastern side. You'll want to descend to a very low altitude here and take a sightseeing tour of the north side of the island. There are hotels, lighthouses, boats, bridges, and even a couple of forts to enjoy. Land at either Paradise Island off the northern coast or at Nassau International if you prefer a larger field.

If you enjoyed this island-hopping excursion, there will be more tips in following articles taking you all the way to Venezuela and back to Florida. But no contraband, please!





Happy Holidays!



Flight Sim Flight Shop  
\$42.95

It's finally here!

Flight Simulator Flight Shop is the add-on for Flight Simulator 5.0, 5.0a or 5.1!

With Flight Shop's Aircraft Factory, you can design, construct, paint and test fly your own aircraft or fly one of the included, ready-to-fly aircraft. For customized details, add your own personal graphics using the photo lab. You can even download aircraft designs from various BBS's! With the Flight Dynamics Editor, you can tune and tweak the flight modeling characteristics of your aircraft. The ATC Workshop features of Flight Shop let you customize your own flight experiences, set goals and include random events and visual feedback. You can even create, file and fly your own flight plan from the included database!

Features these ready-to-fly aircraft: Ultralight, T6 Texan, or B747-400 Airliner. In addition, the CD-ROM version includes: Beech Baron, Blue Angel F/A-18 and DC-3.



ThrustMaster TQS  
\$119.95

The Best gets better!

ThrustMaster doesn't just build state-of-the-art controllers, it creates the art! The proof is right here in the F-16 Throttle Quadrant System. Featuring programmable switches and a thumb trackball, the TQS is a great partner to your FLCs.



CS Commander  
\$24.95

Now you've got  
Point and Click power!

Make your ThrustMaster Controllers FLY with Calana Software's Commander for Windows. No more DOS frustrations! This easy-to-use interface makes your TM programming a breeze. (Now includes TQS support!)

ATP Companion  
\$29.95

New low price!

This wonderful add-on offers increased graphics resolution (up to 800x600x256 colors), new digitized cockpits (3 new panels for 737/747, 767/A320 and Shorts 360), and 3 dimensional flying with the included video driver and special 3-D glasses! No other simulator add-on can offer this kind of excitement.

Extended Holiday Hours!  
November 27 thru December 23

(800) Order Hours  
9:00 am - 7:00 pm  
Monday - Friday (Central)  
Sat. 9:00 am - 3:00 pm

## MILITARY HANGAR

1942: Pacific Air War - CD or 3.5" . . . \$49.95  
1942: Pacific Air War Scenario - 3.5" . . . \$34.95  
Advanced Tactical Fighters . . . C A L L  
ACES (Red Baron, AOE, ATOP, A-10) CD \$54.95  
Aces Of The Pacific w/1946 - 3.5" . . . \$49.95  
Aces Over Europe - CD . . . \$39.95  
Air Warrior - 2.0 . . . C A L L  
Apache . . . \$49.95  
Chuck Yeager's Air Combat - CD . . . \$14.95  
Confirmed Kill . . . C A L L  
Dawn Patrol - CD or 3.5" . . . \$44.95  
F-14 Fleet Defender - CD or 3.5" . . . \$49.95  
F-14 Fleet Defender Scenario Disk - 3.5" \$34.95  
F-15 Strike Eagle III - 3.5" . . . \$24.95  
F-16 Fighting Falcon . . . C A L L  
Falcon 3.0 - 3.5" . . . \$34.95  
Falcon 3 - MiG-29 Deadly Adversary . . . \$24.95  
Falcon 3 - Hornet: Naval Strike Fighter . \$19.95  
Falcon 3 - Operation Fighting Tiger . . . \$14.95  
Falcon Gold - CD . . . \$54.95  
Fighting Falcon - Back to Baghdad . . . C A L L  
Flight Combat . . . C A L L  
Jet Fighter III . . . C A L L  
Overlord - CD or 3.5" . . . \$44.95  
Strike Commander - CD . . . \$14.95  
SU-27 Flanker . . . C A L L  
Top Gun: Fire at Will . . . C A L L  
Tornado w/Desert Storm - CD . . . \$24.95  
Tornado - Desert Storm Scenario - 3.5" \$24.95  
TFX - Eurofighter 2000 . . . C A L L  
U.S. Marine Fighters - CD . . . \$29.95  
U.S. Navy Fighters Gold - CD . . . \$49.95  
Warplanes - CD/MM . . . \$45.95  
Wings of Glory - CD . . . \$45.95  
Wings: Over Europe - CD/MM . . . \$39.95  
Wings: Korea to Vietnam - CD/MM . . . \$39.95  
Wings: Midway to Hiroshima - CD/MM \$39.95

# 800-477-SIMS

## THRUSTMASTER HANGAR

ACM Game Card . . . \$29.95  
Cockpit - Seat Pads . . . \$189.95  
Cockpit - Shoulder Harness . . . \$94.95  
Cockpit - Switch Control Kit . . . \$439.95  
Cockpit - Basic . . . \$679.95  
Cockpit - External Skin . . . \$959.95  
Cockpit - Ladder . . . \$145.95  
Flight Control System . . . \$59.95  
Flight Control System - Pro . . . \$104.95  
F-16 - Flight Control System . . . \$119.95  
F-16 - Flight Control System - Limited . C A L L  
F-16 - Throttle Quadrant System (TQS) \$119.95  
Formula T2 Driving Wheel . . . \$124.95  
Rudder Control System . . . \$104.95  
Weapons Control System Mark II . . . \$94.95  
XL Controller . . . \$29.95

## GROUND SCHOOL

Falcon 3 - The Complete Handbook . . . \$25.95  
Fighter Combat (Shaw) . . . \$29.95  
Flight Simulator Handbook (Stern) . . . \$23.95  
Flight Simulator Official Strategy Guide . \$17.95  
Flight Sim Adventure Guidebook . . . \$22.95  
Intercept Subscription . . . C A L L  
Enemy Lock On! Subscription . . . C A L L

## MAC HANGAR

A-10 Attack! . . . \$52.95  
F/A-18 Hornet 2.0 . . . \$52.95  
F/A-18 Hornet - Korean Crisis . . . \$38.95  
Flight Simulator 4.0 - MAC . . . \$29.95  
Flying Nightmares - CD . . . \$44.95  
Hell Cats Over The Pacific . . . \$49.95  
Hell Cats - Mission Disk . . . \$26.95  
Out of the Sun - Power PC - CD . . . \$44.95  
Red Baron . . . \$44.95  
CH - Flightstick Pro Joystick . . . \$84.95  
ThrustMaster FCS - MAC . . . \$99.95  
ThrustMaster WCS - MAC . . . \$64.95  
ThrustMaster RCS - MAC . . . \$104.95  
Wings Over Europe - CD . . . \$39.95  
Wings: Korea to Vietnam - CD . . . \$39.95

## ACCESSORY HANGAR

CS Commander - 3.5" . . . \$24.95  
Feature Presentations Flight - 3.5" . . . \$19.95  
Joystick Switchbox . . . \$39.95  
Joystick Y-Cable . . . \$11.95  
Joystick Extension Cable . . . \$11.95  
Strategic Falcon or MiG - 3.5" . . . \$24.95  
Voice Commander - 3.5" . . . \$21.95

## HARDWARE HANGAR

F-15 Talon Joystick . . . \$79.95  
F-15 Eagle Joystick . . . \$129.95  
CH - F-16 Combatstick . . . C A L L  
CH - F-16 Fighterstick . . . C A L L  
CH - F-16 Flightstick . . . C A L L  
CH - Flightstick Joystick . . . \$39.95  
CH - Flightstick Pro Joystick . . . \$59.95  
CH - Gamecard III Auto . . . \$33.95  
CH - Gamecard Pro . . . C A L L  
CH - Pedals . . . C A L L  
CH - Pro Pedals . . . \$84.95  
CH - Throttle . . . C A L L  
CH - Pro Throttle . . . C A L L  
CH - Virtual Pilot . . . \$69.95  
CH - Virtual Pilot Pro . . . \$84.95  
Gravis Eliminator Game Card . . . \$29.95  
Notebook Gameport . . . \$45.95  
Wingman Extreme . . . \$54.95

## GENERAL AVIATION HANGAR

Air Havoc Controller - CD . . . \$49.95  
ATP Companion (3DAGS) - 3.5" . . . \$29.95  
Final Approach . . . \$34.95  
Flight Assignment: ATP - 3.5" . . . \$32.95  
Flight Light - CD or 3.5" . . . \$22.95  
Flight Light Plus - CD or 3.5" . . . \$35.95  
Flight Simulator 5.1 - 3.5" . . . \$46.95  
Flight Simulator 5.1 - CD . . . \$56.95  
Flight Unlimited - CD . . . \$54.95  
FS4 - Aircraft & Scenery Designer - 3.5" \$36.95  
FS5 - Flight Sim Flight Shop . . . \$42.95  
FS5 - Real Weather Pilot - 3.5" . . . \$26.95  
Navigator 5.1 . . . \$34.95  
Tower . . . C A L L  
Tracon for Windows . . . \$44.95  
USA East/West (Includes ATP) - CD . . . \$69.95  
We carry Flight Sim 4 add-ons - Please Call Us!

## SCENERY HANGAR

ATP - Swiss Scenery - 3.5" . . . \$39.95  
ATP - Italy Scenery - 3.5" . . . \$44.95  
FS5 - Caribbean - 3.5" . . . \$22.95  
FS5 - Europe Set 1 - CD or 3.5" . . . \$29.95  
FS5 - Hawaii - CD . . . \$22.95  
FS5 - Honk Kong - 3.5" . . . \$34.95  
FS5 - Japan - 3.5" . . . \$22.95  
FS5 - Las Vegas - CD or 3.5" . . . \$37.95  
FS5 - New York - 3.5" . . . \$22.95  
FS5 - Paris - 3.5" . . . \$22.95  
FS5 - San Francisco - 3.5" . . . \$22.95  
USA East or West - 3.5" (SL or MS) . . . \$39.95  
Scenery Disk 7, 9, 11, 12 (ea.) . . . \$19.95

**NOTAM:** We truly want you to be satisfied with your flying experiences with us! If you have a problem with an item purchased from us, please call us at (800) 477-7467 and we'll do our best to get you back in the air! If you find your purchase is defective, we will replace it with same item immediately. If you like, unopened software may be returned for store credit or exchange, less shipping charges. Incomplete items are subject to 15% restocking fee. All sales must be considered final. Shipping charges, regrettably, are not refundable. Please call (615) 754-8750 for return authorization number before returning items. We ask that you please check compatibility before ordering. Due to the volatile nature of the software business, all prices and availability are subject to change without notice (some items limited to store stock). Please call for items not listed. All our products are new and in original, unopened packaging. WE DO NOT RE-SHRINKWRAP MERCHANDISE!!!

Payment Methods: VISA, MASTERCARD and AMEX gladly accepted - no surcharge. Money Orders, COD, and Personal Checks also accepted. \$6.00 COD charge. Please allow two weeks for Personal Checks to clear. Your credit card will not be charged until your order ships. Sale prices not available with any other discounts.

Shipping: UPS Ground \$5.00, UPS 3-Day Select \$8.00, UPS 2nd-Day Air \$10.00 to lower 48 states. Items over five pounds slightly higher. Shipment to Alaska, Hawaii, and Puerto Rico extra. Canada and other International orders please call for shipping charges. We ship most items the same day.

Send Money Orders or Checks to:

FLIGHT SIM CENTRAL, 1440 Quarry Road  
Dept. 1195-PC Mt. Juliet, TN 37122-7904



Gladly Accepted

How To Order:

By Phone (800) 477-7467  
By Fax (615) 754-4138  
By Modem (615) 754-5676  
International (615) 754-8750  
72662.3123@compuserve.com



# Wings And Things

by John P. Withers



Supply Lines is the Aces' peek into the pipeline regarding hot items from future issues, as well as a report on events of interest to our readers which may occur between issues. This is the column to check for upcoming air show dates, television specials and other information relevant to all the Aces.

First let's discuss some of the incubating issues which will be hitting the assembly line in forthcoming issues of PC Ace:

- Heard about Thunderseats, the simulation chairs that are wired for sound? Sounds hot, right, but you may be wondering if they're worth the sticker price? Next time out, we'll be running the Thunderseat offerings through their paces in order to provide the ultimate skinny on price vs. performance.

- Now let's get to the meat and potatoes, software-wise. In short: What sucked in 1995, and what ruled? The Ace's editor-in-chief will be polling the hottest crew in virtual space for their verdicts on everything from software to virtual cockpits. The jury, of course, must include all the Aces, so vote for your bests and worsts via our temporary ACE web page @<http://www.cris.com/~thunk/pace/pcaces.shtml>.

Register your vote now, Aces. If you don't pitch, you can't bitch. (Okay, okay, we'll

still listen to your gripes even if you don't drop your virtual ballot, but there will be a credibility gap, okay?)

- Flight Sim Guru KC Basham will continue his heavy hitting flight coverage next time out with a complete look at Su-27 as well as the second part of his amazingly in-depth primer on Air Combat Energy Management. Be sure to read these articles in order to stay ahead of the game in air sims. (These invaluable documents will also prove invaluable when the time comes to strut your stuff in the First Annual PC Ace Air Show and Competition – stay tuned for details next issue on the hottest sim event in the history of cyberspace)!

- And what about that weird box that's linked up to all our computers? It makes those funny noises and links us up with people in the most far-flung parts of the world. You know, that doohickey called a modem? Well, these telecommunication babies are getting faaaaaaast. But which companies are really taking advantage of this newfound power to bring envelope-stretching heads-up gaming to your personal work station?

Glad you asked. PC Ace will transport its readers into the electronic com-sys for a round up of the best and brightest online gaming expe-

riences, as well as a trenchant analysis of the best and worst points of online gaming.

And, of course, we will, as always, provide the most discriminating readers in the gaming world with our traditional fusillade of news, reviews, and features covering every segment of the sim, wargame, and science fiction markets.

So do not—NOT—miss muster for the next issue of PC Ace.

## Out On The Web

Naturally, PC Ace intends to cover several key locations in dataspace. The first item of business, as mentioned previously, is our homepage. This area, located at: <http://www.chris.com/~thunk/pace/pcaces.shtml>, contains several goodies related to our magazine. We will also be working like grunts to upgrade this site on a regular basis, so keep checking us out and don't be shy about interacting and sending your thoughts.

(Also, the Discovery Channel has an interesting page at <http://www.discovery.com/>. One feature is a plane identification weekly quiz that should keep the propeller-heads in the crowd crowing.)

The on-line scene is sprouting like mushrooms, so stay plugged in and your dili-



THE  
**Discovery**  
CHANNEL



The  
of Military Aircraft  
from 1946 to

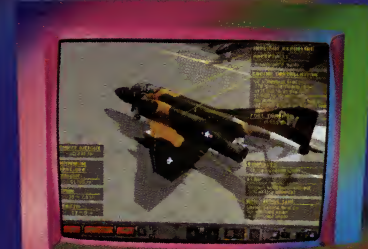
# WINGS

## KOREA TO VIETNAM



Find in-depth intelligence  
on 500 aircraft.

Visit the airbases used  
in actual combat.



Explore a multimedia database  
of technical and service data.

**FLY** the planes  
that **RULED** THE  
SKIES!

Strap yourself in and take to the skies — from screaming jets to lumbering bombers and agile helicopters, here are the planes that fought the flare-ups of the Cold War. **Wings: Korea to Vietnam** is a comprehensive multimedia database of technical and service data on more than 500 aircraft and 200 weapons systems. With 1,000 full-screen photographs. Over an hour of gripping video, including animation of combat and operative weapons, Korea to Vietnam is the first in a collector's series of Wings CD-ROMs you'll treasure for years to come.

For more information on this  
product, or to get your copy of  
our free CD-ROM brochure, call

**1-800-762-2189**

Experience the real joy of CD-ROM — the power to discover new  
ways to view the world. Nobody takes you there like the leader  
in real-world entertainment. The Discovery Channel.

For ages 10 to adult. Available in Windows and Mac versions.  
Produced in conjunction with Maris Multimedia. © 1995 DCI.





gence will be rewarded, deal?

### Discovery Channel Update

It goes without saying that every hardcore war fanatic already has the Discovery Channel pinned down in their remote control sights. For time invested, there is simply no better source of information about the history of warfare available on television. We here at PC Ace recognize that many of our readers are going to be interested in watching and taping a number of Discovery Channel programs, particularly the Wings series, which chronicles the history of war in the air. Alas, local TV Guides only provide data in week-long gulps. Since superior performance requires superior planning, and superior planning requires superior intelligence, the Aces have provided a long term schedule for Wings, both daytime and the weekly evening showings, along with a short description of some of the newer episodes.

#### Wings Schedule:

Monday through Friday 6:00-7:00pm

Week of      Airdate      Episode

#### Wings of the 20th Century

11/13	Strange Planes
	Catapults
11/14	Sea Wings
	Wing of Mercy
11/15	Wings of the Luftwaffe
	Seaplanes
11/16	Wings of the Luftwaffe
	Me 321: Gigant
11/17	Modern Combat Aircraft
	West's Naval Combat Aircraft,

#### Wings of Desert Storm

11/20	Modern Combat Aircraft
	Tornado
11/21	Sea Wings
	Hunter, the
11/22	Sea Wings
	Thunder from the Sea
11/23	Strange Planes
	Hovercraft, the
11/24	Modern Combat Aircraft
	Future Combat Aircraft

#### Wings of the Red Star

11/27	Wings of the Red Star
	Flying Tank, The
11/28	Wings of the Red Star
	Great Patriotic War, The
11/29	Wings of the Red Star
	Last Generation, The
11/30	Wings of the Red Star
	Nuclear Bear, The
12/01	Wings of the Red Star
	Phantom's Foe, The

#### Espionage Aircraft

12/04	Strange Planes
	Eyes in the Sky
12/05	Modern Combat Aircraft
	US Air Power
12/06	Modern Combat Aircraft
	Stealth
12/07	Modern Combat Aircraft

#### Reconnaissance and Intelligence Aircraft

12/08	Great Planes III
	Lockheed SR71 Blackbird

#### Wings over Korea

12/11	Sea Wings
	Cat over Korea
12/12	Wings of the Red Star
	Duel over Korea
12/13	Great Planes III
	Douglas AD2 Skyraider, The
12/14	Modern Combat Aircraft
	Air Combat Today
12/15	Great Planes III
	Douglas A26 Invader, The

#### Wings of the Luftwaffe

12/18	Wings of the Luftwaffe
	Ar 234 Blitz
12/19	Wings of the Luftwaffe
	Fw 190
12/20	Wings of the Luftwaffe
	He 111
12/21	Wings of the Luftwaffe
	Ju 52
12/22	Wings of the Luftwaffe
	Ju 87 Stuka

#### Wings of World War II

12/25	Modern Combat Aircraft
	Soviet Air Power
12/26	Sea Wings
	Avenger, the
12/27	Strange Planes
	Drones, Midgets, Mutations
12/28	Great Planes III
	Vought Corsair 1 (F4u), The
12/29	Great Planes III
	Rockwell B-1, The

#### Wings

Saturdays 9:00-10:00pm and 1:00-2:00am; Sundays 1:00-2:00pm.

Airdate	Episode
11/18 11/19	Eagle Over Lebanon (Saturday late repeat will be 2-3am)
11/25 11/26	Sea Wings
12/02 12/03	Last of the Gunfighters, The
12/09 12/10	Wings Over the Pacific
12/16 12/17	Flight of the Falcon
12/23 12/24	Top Guns
12/30 12/31	Wings Over Europe
	Sea Wings
	Falkland Surprise, The



# ThrustMaster™ controller programming made easier

## <sup>CS</sup> Commander for Windows™

The **VISUAL** programming system for  
the FCS/PFCS, WCS II, and FLCS controllers.  
TQS support coming soon!

To see a demonstration of this amazing new concept in PC game controller programming,  
log onto our BBS at (510) 686-0908, and download the demo file: CSCDEMO.ZIP.  
Or, if you're a Net cruiser, drop by our web site at: <http://www.hooked.net/users/eob3/index.html>.

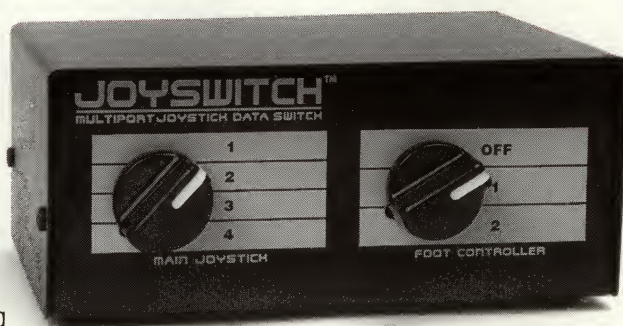
**\$29.95** S.R.P.\*

Available from: Flight Sim Central    SimCap, Inc.  
800-477-7467    914-338-3520

ThrustMaster and RCS are registered trademarks of ThrustMaster, Inc. FCS, PFCS, WCS II, FLCS, and TQS are all trademarks of ThrustMaster, Inc.\*Suggested Retail PriceCalana Software - 1647 Willow Pass Road Suite 237 Concord, CA 94520-2611 Phone: 510-680-8143 / BBS: 510-686-0908 / CIS: 75444,1327 / AOL: CalanaSoft / GEnie: C.Software1 / Internet: eob3@calanasw.com

# No More Hassle

Tired of fumbling with joystick cables behind your computer? Are you spending more time changing joysticks than playing your favorite games? You need a hassle-free alternative: the **Joyswitch™**. At last you can jump from joystick to joystick, game to game, with the speed and ease of turning a switch. Connect up to four devices (flight sticks, yokes, steering wheels, game pads, etc. ) and two sets of foot



controllers (rudder or gas / brake pedals) to your computer. Maximize your performance by switching to the "right" joystick for each game, instead of using whichever one happens to be connected to your computer. Get greater value from your expensive, specialized controllers. The Joyswitch works with most IBM PC compatible controllers. Joystick extension cable included for FREE! **Order TODAY! Only \$59.95.** Suggested Retail Price



**To order call: (714) 362-8698**

OR

**Order on Check Six BBS**  
(714) 362-8299 (8-N-1 1200-28.8kb)



Also available through: **Egghead Software, Flight Sim Central, Chips & Bits, Computer Express**

© 1994 Lead Pursuit, Inc., Joyswitch is a trademark of Lead Pursuit, Inc. For more information call or write to: Lead Pursuit, Inc., 27068 La Paz Rd. #466, Laguna Niguel, CA 92656 Phone: (714)362-8698 F AX: (714)831-4334.



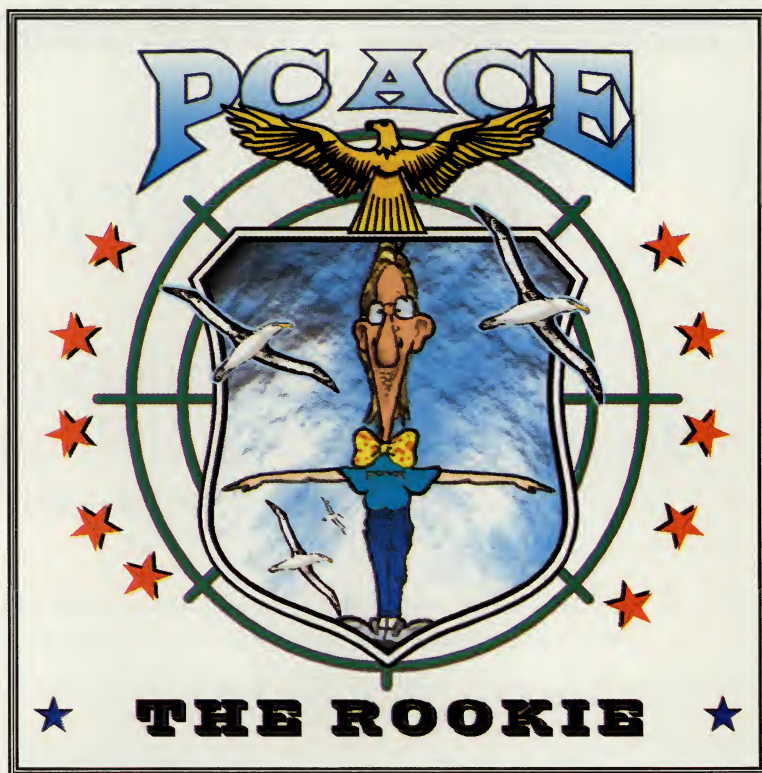
# Why Tomcat Alley Really Rules

by Bill "Potshot" Kunkel

This column title is not without its ironic overtones. After all, this "rookie" has been writing about computer games since 1978. So, understandably, I don't feel much like a greenhorn. I flew in Bruce Artwick's original *Flight Simulator*, soared the skies in the early days of MicroProse and Spectrum-HoloByte's ascent into flight sim dominance, and watched every publisher from EA to Domark get in on the act.

I even had a long-running fantasy which kicked in whenever I took a commercial airline flight (and believe me, as a passenger, I've logged more air miles than John Wayne): the ship would suddenly shudder, and my imagination would generate the image of a stewardess, smiling in an attempt to project the appearance of calm. "Excuse me, ladies and gentlemen, there's no reason to be alarmed but has anyone here ever flown a DC-10?"

My fellow passengers generate an instant murmur



of anxiety, looking about desperately for a qualified volunteer. But no one rises. The stewardess disappears into the cockpit and the ship's nose begins to discernibly droop.

A woman screams. People begin to rifle through carry-on luggage for valium while the rest drain every one of those tiny bottles of on-board booze.

The stewardess reemerges. "Please, don't be alarmed," she repeats (albeit with considerably less aplomb than before). "But has anyone here ever flown an aircraft of any kind?"

Again the heads swivel, and again no one stands. The stewardess is gone when our heads return to face front, but less than 10 seconds later, she's back. "OK," she relents, speaking as if directly to me: "Is there anyone on board who's pretty good at SubLogic's *Flight Simulator 2*?"

Yeah, I was really getting into those sims for a while, and even held some silly

hopes that they would eventually teach me how to fly. But ironically, as things turned out, the more sophisticated the sims became, the less interest I was able to generate in them. Sure, the buildings and water beneath me looked better, and the clouds appeared less like white polygons and more like cottonballs. But, unfortunately, while the enhanced graphics drew me to the sims, their level of complexity simultaneously drove me away. I found myself surrounded by gamers who would flame a Corsair sim because the flutter in the left retro-flywheel during a Gottinhimmel roll was inappropriately flaccid. This is a disturbing trend, thought I. Pretty soon, I realized, the only people who'll be able to play flight sims will be licensed pilots.

It was then that "The Rookie" was born. I became more and more wary of this growing obsession with "realism" at the expense of just plain entertainment. I'll always remember a conversation I



# SILENT HUNTER™

The Ultimate Underwater Experience!



On PC-DOS  
CD-ROM  
for IBM and  
Compatibles

A feature-packed World War II submarine simulator, SILENT HUNTER™ is without equal.

As commander of a U.S. submarine in the Pacific, your task is simple — *sink as much enemy tonnage as possible!*

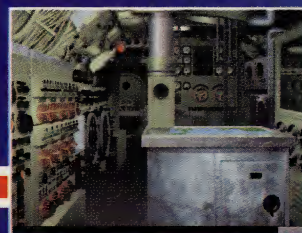
Choose from a variety of American submarines — and let the hunt begin! Prowl the shipping lanes. Steal into enemy harbors. Embark on Special Operations missions. Authentic WWII film footage, cinematics and narration throughout provide a historical feel for the submarine combat experience.

Play individual missions or an entire campaign. And prepare to be blown away by magnificent SuperVGA graphics, an original sound track and action so real you'll want a life jacket!

**TO ORDER:** Visit your retailer or call 1-800-601-PLAY with Visa/MC (North America only). ©1995 Strategic Simulations, Inc., a Mindscape Company. All rights reserved.



A MINDSCAPE® COMPANY



Technical Advisor William "Bud" Gruner commanded the submarine USS Skate during WWII, and was awarded the Navy Cross and the Silver Star. Commander Gruner provides narration of technical and tactical matters as well as personal anecdotes of his vast WWII experience.

Call 1-800-771-3772  
for Game Rating  
information.



IBM 256-color SVGA



had in the late 80s with sim savant Sid Meier on the subject of flight simulators. "I just like to simulate the fun stuff," he told me. The words cleaved unto my heart and have remained with me ever since. Sometimes I repeat them, like a mantra: "Just the fun stuff. Just the fun stuff. Just the fun stuff."

Who gives a flip about chaff and wind sheer and conservation of energy?

Well, of course, most of you, our beloved readers, care a great deal about these things. Me, I enjoy steering a plane and blowing things up. I enjoy wiping out other planes (sometimes, if no enemy targets are available, I'll blow up my own wingmen on g.p.), but my personal preference is ground targets.

The games I've enjoyed the most have been titles like F-15 Strike Eagle (all versions, except the coin-op, with

a special fondness for the spectacular SNES edition), with its sight-and-incinerate simplicity. I even hold a place in my cynical heart for that most universally reviled (among purists) of combat sims -Digital Pictures' *Tomcat Alley* (Sega/Sega-CD) -because it makes me feel like I'm in a war movie. And as everyone knows, all you needed to do to succeed in a war movie was knowledge of a few cool-sounding commands (stuff like: "Let's send them to hell with regards from Uncle Sam!" and "Johnny! You've got a MiG on your tail!") and be able to fire a machine gun.

That's what I like. The "fun stuff."

So, in this column, I will remain the voice of all those rookies out there who love the fantasy of combat flight but would rather not worry about ailerons and aerobatics. I am

the arcade-style plug-and-play pilot who wants only to blow things up and have fun.

But as editor-in-chief of **PC ACE**, I am the guy who will bust his butt to get you hardcores the hardest core coverage of realistic sims any periodical has ever published.

*Over and out!*



**16 MONTH  
96 CALENDAR**

VISA/MC call: **(800) 435-9377**

\$11.95+\$4.50SH/CA res add 8.25% tax

or send checks to:  
PO Box 9938

Marina del Rey, CA 90295  
(310) 577-9471

## **BUCHANAN AVIATION ART**

924 S. AIKEN AVE  
PITTSBURGH, PA 15232  
(412) 682-4729 (800) 659-4174

**"THE BEST VALUE IN AVIATION ART"**



"VICTORY FLYOVER" by Robert Taylor - \$295.00



"TWILIGHT CONQUEST" by Nicolas Trudgian - \$150.00

- All prints shipped 2nd day at no extra charge
- Purchase any print(s) valued at \$295.00 or more and receive a free aviation art book!  
Valid only with in stock prints.
- Our new color catalogs are only \$2.00 and receive a \$25.00 credit when you purchase!



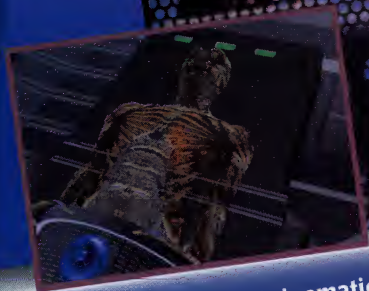
Battle the TEK Lords  
of the Future...On Your PC Today.

# WILLIAM SHATNER'S TEKWAR

"TEKWAR goes beyond William Shatner's best-selling books to fully involve you in a 3D game where you explore an intricate futuristic world in the pursuit of dangerous criminals."  
Russ Ceccola, Associate Editor, Electronic Games



Explore an intricate, futuristic world as you embark on strategic missions to battle sinister TEK Lords. Use original weapons and high-tek props to bring down these criminals and defend ordinary citizens.



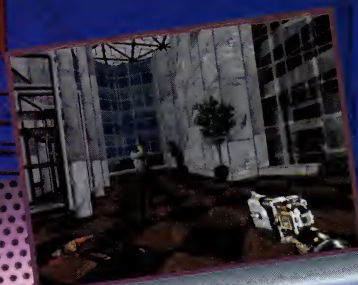
SVGA Graphics, 3D rendered cinematic introduction and original full-motion video starring William Shatner.

Visit Capstone Online:  
Web Site: <http://www.gate.net/~intracor/>  
America Online (Keyword: Capstone)  
Software Creations BBS (508)365-9352  
To Order Call: (800)INTRACO

CHECK OUT  
CAPSTONE AT  
INTRACORP'S  
WEB SITE

"3D gaming like you've  
always wanted...the next  
step in technology."

Gregory Off, Sr.  
Editor, Dimension 3



Powerful "Build" Engine exclusively  
licensed from 3D Realms offers  
players greater freedom in movement,  
speed and perspective in a massive  
virtual playing field like no other  
first-person game.

Network Play  
for up to 16 and  
Head-to-Head  
Modem Play

IBM CD-ROM

Look for the Official  
TEKWAR  
Strategy Guide from  
BradyGAMES

Capstone™

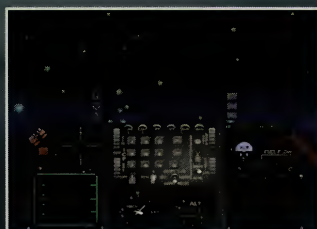
THE PINNACLE OF  
ENTERTAINMENT SOFTWARE

Software © 1995 IntraCorp, Inc. All rights reserved. Artwork © 1994 USA  
Networks. 3D engine licensed from 3D REALMS ENTERTAINMENT. Capstone and  
The Pinnacle of Entertainment Software are trademarks of IntraCorp, Inc.  
Software based on TekWar novel authored by William Shatner.

INTRACORP  
INC



# THE ULTIMATE BATTLE



## FIGHTING FALCON BACK TO BAGHDAD

Now you can hone your skills with the same accuracy as the military. "Fighting Falcon: Back to Baghdad" is created directly from "Gun Flag" and "Top Gun" flight simulators used in Air Force Pilot training. "Fighting Falcon" is the most realistic and accurate flight model on the market - complete with satellite photos from the U.S. Department of Defense, precise geographic data and 40 missions packed with Air to Ground attacks. "Fighting Falcon" will provide you with the most advanced combat simulation you have ever experienced...

Are you ready for the challenge?

## F-16 FLIGHT CONTROLS

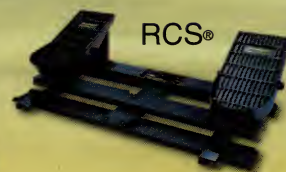
When you're flying Back to Baghdad, only the best controls will do. Bring it back home with the ThrustMaster F-16 FLCS\*, F-16 TQS and Rudder Control System. ThrustMaster's F-16 flight controls are specifically designed to compliment the F-16 Fighting Falcon flight model.

When you're flying the best combat simulator,  
only the best controls will do...

\* F-16 FLCS Required for the F-16 TQS to Function



F-16 TQS™



RCS®



F-16 FLCS™



SPOT IMAGE CORPORATION

WORLDWIDE GAMES & SOFTWARE LIMITED

MILITARY SIMULATION INC.

5910 N.E. 82nd Avenue Vancouver, WA. 98662

PHONE (360)254-2000 FAX (360)254-1746

World Wide Web: [HTTP://www.military-sim.com](http://www.military-sim.com)